MAGIC WELD 200

0 3 1 0 **222509003 - GB**

ENGLISH

18/11/08 22262M00
preparato da UPT
approvato da DITE

The engine driven welder is arranged as a single block composed of the engine and stainless steel box structure where the front is the cover. All electrical components of the machine (except for the reactor which is located on the base under the engine) are located inside, which are: an alternator with permanent magnets, a high frequency chopper bridge, a control board for the welding current, an inverter which generates alternating current of 50Hz with 230 or 110 volts and an electromagnet for the tick-over.

Main features:

- D.C. welding current 200A al 60%
- Continuous regulation of the welding current with "Chopper Technology"
- Suitable for basic and rutile electrodes. A reactance for cellulose electrodes is available as an option
- Antistick function (small arc force)
- Continuous auxiliary output 50Hz to 230V/3kVA to 110V/2kVA (50 Hz/60Hz)
- Engine accelerator at minimum/maximum at load take up
- Weight 57 Kg
- Acoustic Power 74 dBA to 7m

Electrical components of the machine:

- Permanent magnet alternator: the alternator has 2 galvanically separated windings, one for welding and the other for the auxiliary output.
- Tick-over solenoid: an electromagnet in absence of load. When the load is present, welding or auxiliary output, the electromagnet is not supplied any more and the engine speed goes to the maximum (4000 rpm rated open circuit).
- High frequency chopper diode bridge: it regulates the welding current using the “Chopper Technology”, which chops the welding D.C. current at high frequency.
- Hall sensor: it measures with high precision the welding current and it’s completely isolated from the welding circuit.
- Serie's reactance
- Welding current adjustment board: a board controls the welding process and supplies the engine accelerator control electromagnet.
- Auxiliary in alternating current. An inverter generates alternating current 110/230V 50Hz with continuous current (duty cycle 100%) of 1.8 kVA/ 2.5 kVA

IQNet
THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and its partner
CISQ/ICIM
hereby certify that the organization

BCS S.p.A.

Head Office and Operative Unit: Viale Mazzini, 161 - I-20081 Abbiategrasso (MI)
Operative Units: Via Valbrina, 17/19 - I-42045 Luzzara (RE)
Viale Europa, 59 - I-20090 Cusago (MI)

for the following field of activities

Design, production and servicing of tractors, agricultural and green maintenance machines, engine driven welders and generating sets.

has implemented and maintains a

Quality Management System

which fulfills the requirements of the following standard

ISO 9001:2000

Issued on: **2009-03-06**
Validity date: **2012-03-05**
Registration Number: IT-3722

IQNet — *René Wasmer*, *President of IQNET*
CISQ — *Gianrenzo Prati*, *President of CISQ*

IQNet partners*:
AENOR *Spain* AFAQ AFNOR *France* AIB-Vincotte International *Belgium* ANCE *Mexico* APCER *Portugal* CISQ *Italy* CQC *China* CQM *China* CQS *Czech Republic* Cro Cert *Croatia* DQS *Germany* DS *Denmark* ELOT *Greece* FCAV *Brazil* FONDONORMA *Venezuela* HKQAA *Hong Kong China* ICONTEC *Colombia* IMNC *Mexico* Inspecta Certification *Finland* IRAM *Argentina* JQA *Japan* KFQ *Korea* MSZT *Hungary* Nemko AS *Norway* NSAI *Ireland* PCBC *Poland* QMI *Canada* Quality Austria *Austria* RR *Russia* SAI Global *Australia* SII *Israel* SIQ *Slovenia* SIRIM QAS International *Malaysia* SQS *Switzerland* SRAC *Romania* TEST St Petersburg *Russia* *YUQS Serbia*
IQNet is represented in the USA by: AFAQ AFNOR, AIB-Vincotte International, CISQ, DQS, NSAI Inc., QMI and SAI Global
*The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

CISQ is a member of IQNet

ICIM
www.icim.it

CERTIFICATO n. 0192/5
CERTIFICATE No.

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITA' DI
WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

BCS S.p.A.

UNITA' OPERATIVE
OPERATIVE UNITS

Sede e Unità Operativa: Viale Mazzini, 161 - 20081 Abbiategrasso (MI)
Unità Operative: Via Valbrina, 17/19 - 42045 Luzzara (RE)
Viale Europa, 59 - 20090 Cusago (MI)
Italia

E' CONFORME ALLA NORMA
IS IN COMPLIANCE WITH THE STANDARD

UNI EN ISO 9001:2000

PER LE SEGUENTI ATTIVITA'
FOR THE FOLLOWING ACTIVITIES

EA: 18

Progettazione, produzione ed assistenza di trattori, macchine per agricoltura e manutenzione del verde, motosaldatrici e gruppi elettrogeni.

Design, production and servicing of tractors, agricultural and green maintenance machines, engine driven welders and generating sets.

Riferirsi al Manuale della Qualità per l'applicabilità dei requisiti della Norma ISO 9001:2000.
Refer to Quality Manual for details of application to ISO 9001:2000 requirements.

Il presente certificato è soggetto al rispetto del regolamento per la certificazione dei sistemi di gestione per la qualità delle aziende.
The use and the validity of this certificate shall satisfy the requirements of the rules for the certification of company quality management systems.

Data emissione *First issue*	Emissione corrente *Current issue*	Data di scadenza *Expiring date*
30/05/1994	06/03/2009	05/03/2012

ICIM S.p.A. – PIAZZA A. DIAZ, 2 - 20123 MILANO

SINCERT

CISQ è la Federazione Italiana di Organismi di Certificazione dei sistemi di gestione aziendale
CISQ is the Italian Federation of management system Certification Bodies

FEDERAZIONE CISQ

UNI EN ISO 9001 : 2000

ISO 9001:2000 - Cert. 0192

MOSA has certified its quality system according to UNI EN ISO 9001:2000 to ensure a constant, high quality of its products. This certification covers the design, production and servicing of engine driven welders and generating sets.

The certifying institute, ICIM, which is a member of the International Certification Network IQNet, awarded the official approval to MOSA after an examination of its operations at the head office and plant in Cusago (MI), Italy.

This certification is not a point of arrival but a pledge on the part of the entire company to maintain a level of quality of both its products and services which will continue to satisfy the needs of its clients, as well as to improve the transparency and the communications regarding all the company's actives in accordance with the official procedures and in harmony with the MOSA Manual of Quality.

The advantages for MOSA clients are:

- Constant quality of products and services at the high level which the client expects;
- Continuous efforts to improve the products and their performance at competitive conditions;
- Competent support in the solution of problems;
- Information and training in the correct application and use of the products to assure the security of the operator and protect the environment;
- Regular inspections by ICIM to confirm that the requirements of the company's quality system and ISO 9001 are being respected.

All these advantages are guaranteed by the CERTIFICATE OF QUALITY SYSTEM No.0192 issued by ICIM S.p.A. - Milano (Italy) - www.icim.it

M 01 QUALITY SYSTEM
M 1.01 COPYRIGHT
M 1.1 NOTES
M 1.4 CE MARK
M 1.5 TECHNICAL DATA
M 2 ADVICE
M 2.1 SYMBOLS
M 2.2 ADVICE ENGINE DRIVEN WELDER
M 2.6 INSTALLATION AND ADVICE
M 2.7 INSTALLATION
M 3 UNPACKING AND TRANSPORT
M 6.15 ASSEMBLING: CTM - MW 200
M 25 SET-UP FOR OPERATION
M 26 ENGINE STARTING
M 27 STOPPING THE ENGINE
M 31 CONTROLS
M 34... USE AS A WELDER
M 34.2 CHECKING AN ADJUST THE MAXIMUM WELDING CURRENT
M 34.3 PARALLEL ENGINE DRIVEN WELDER
M 37 USE AS A GENERATOR
M 40.2... TROUBLE-SHOOTING
M 43 MAINTENANCE
M 45 STORAGE - CUST OFF
M 53 DIMENSIONS
M 55 RECOMMENDED ELECTRODES
M 60 ELECTRICAL SYSTEM LEGENDE
M 61-….. ELECTRICAL SYSTEM

R1 SPARE PARTS LIST
AG... SPARE PARTS

⚠ ATTENTION

This use and maintenance manual is an important part of the machines in question.
The assistance and maintenance personel must keep said manual at disposal, as well as that for the engine and alternator (if the machine is synchronous) and all other documentation about the machine.

We advise you to pay attention to the pages concerning the security (see page M1.1).

MOSA

© All rights are reserved to said Company.

It is a property logo of MOSA division of B.C.S. S.p.A. All other possible logos contained in the documentation are registered by the respective owners.

➠ The reproduction and total or partial use, in any form and/or with any means, of the documentation is allowed to nobody without a written permission by MOSA division of B.C.S. S.p.A.

To this aim is reminded the protection of the author's right and the rights connected to the creation and design for communication, as provided by the laws in force in the matter.

In no case MOSA division of B.C.S. S.p.A. will be held responsible for any damaga, direct or indirect, in relation with the use of the given information.

MOSA division of B.C.S. S.p.A. does not take any responsibility about the shown information on firms or individuals, but keeps the right to refuse services or information publication which it judges discutible, unright or illegal.

INFORMATION

Dear Customer,
We wish to thank you for having bought from MOSA a high quality set.

Our sections for Technical Service and Spare Parts will work at best to help you if it were necessary.

To this purpose we advise you, for all control and overhaul operations, to turn to the nearest authorized Service Centre, where you will obtain a prompt and specialized intervention.

☞ In case you do not profit on these Services and some parts are replaced, please ask and be sure that are used exclusively original MOSA parts; this to guarantee that the performances and the initial safety prescribed by the norms in force are re-established.

☞ *The use of **non original spare parts will cancel immediately** any guarantee and Technical Service obligation from MOSA.*

NOTES ABOUT THE MANUAL

Before actioning the machine please read this manual attentively. Follow the instructions contained in it, in this way you will avoid inconveniences due to negligence, mistakes or incorrect maintenance. The manual is for qualified personnel, who knows the rules: about safety and health, installation and use of sets movable as well as fixed.

You must remember that, in case you have difficulties for use or installation or others, our Technical Service is always at your disposal for explanations or interventions.

The manual for Use Maintenance and Spare Parts is an integrant part of the product. It must be kept with care during all the life of the product.
In case the machine and/or the set should be yielded to another user, this manual must also given to him.
Do not damage it, do not take parts away, do not tear pages and keep it in places protected from dampness and heat.

You must take into account that some figures contained in it want only to identify the described parts and therefore might not correspond to the machine in your possession.

INFORMATION OF GENERAL TYPE

In the envelope given together with the machine and/or set you will find: the manual for Use Maintenance and Spare Parts, the manual for use of the engine and the tools (if included in the equipment), the guarantee (in the countries where it is prescribed by law).

Our products have been designed for the use of generation for welding, electric and hydraulic system; ANY OTHER DIFFERENT USE NOT INCLUDED IN THE ONE INDICATED, relieves MOSA from the risks which could happen or, anyway, from that which was agreed when selling the machine; MOSA excludes any responsibility for damages to the machine, to the things or to persons in this case.

Our products are made in conformity with the safety norms in force, for which it is advisable to use all these devices or information so that the use does not bring damage to persons or things.

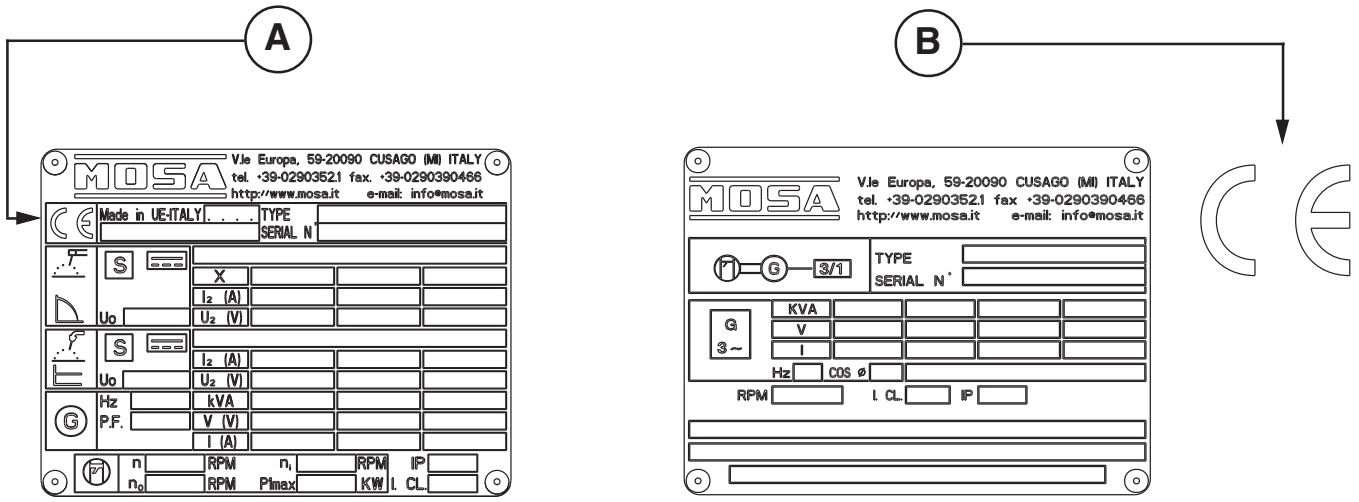
While working it is advisable to keep to the personal safety norms in force in the countries to which the product is destined (clothing, work tools, etc.).

Do not modify for any motive parts of the machine (fastenings, holes, electric or mechanical devices, others..) if not duly authorized in writing by MOSA: the responsibility coming from any potential intervention will fall on the executioner as in fact he becomes maker of the machine.

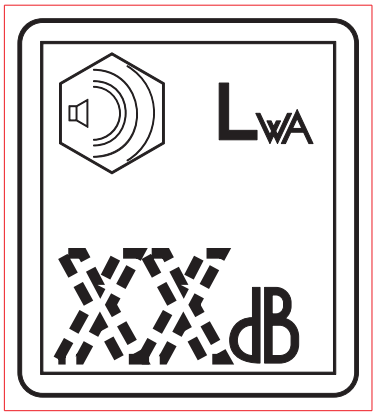
☞ ***Notice:** this manual does not engage MOSA, who keeps the faculty, apart the essential characteristics of the model here described and illustrated, to bring betterments and modifications to parts and accessories, without putting this manual uptodate immediately.*

Any of our product is labelled with CE marking attesting its conformity to appliable directives and also the fulfillment of safety requirements of the product itself; the list of these directives is part of the declaration of conformity included in any machine standard equipment.
Here below the adopted symbol:

CE marking is clearly readable and unerasable and it can be either part of the data-plate (A) or placed as a sticker near the data-plate (B)



Furthermore, on each model it is shown the noise level value; the symbol used is the following:



The indication is shown in a clear, readable and indeleble way on a sticker.

Technical data	MAGIC WELD 200	
D.C. WELDING		
Current range, continuous	20 - 200A	
Open circuit voltage	70V	
Duty cycle	200 A - 60%	
A.C. GENERATION	**230 V**	**110 V**
Single-phase output (max)	3 kVA / 230 V / 13 A	2 kVA / 110 V / 18.2A - 50 Hz / 60 Hz
Single-phase output (continuous)	2.5 kVA/ 230 V /10.9 A	1.8 kVA / 110 V / 16.4 A - 50 Hz / 60 Hz
Cos φ	0.8	0.8
ALTERNATOR	Self-excited, brushless	
Type	permanent magnet	
Insulating class	H	
ENGINE		
Mark / Model	HONDA / GX 270	
Type / Cooling system	Gasoline 4-stroke / Air	
Cylinders / Displacement	1 / 270 cm^3	
Output max	6 kW (8.1 HP)	
Speed	3600 rpm	
Fuel consumption (Welding 60%)	1.6 l/h	
Engine oil capacity	0.6 l	
Starter	recoil	
GENERAL SPECIFICATIONS		
Tank capacity	5.3 l	
Running time (Welding 60%)	3.3 h	
Protection	IP 23	
Dimensions max. on base Lxlxh *	610x490x520	
Weight (dry) *	57Kg	
Acoustic power LwA (pressure LpA)	99 dB(A) (74 dB(A) @ 7 m)	

* Dimensions and weight are inclusive of all parts.

POWER

Declared power according to ISO 3046-1 (temperature 25°C, 30% relative hummidity, altitude 100 m above sea level).
It's admitted overload of 10% each hour every 12 h.
In an **approximative** way one reduces: of 1% every 100 m altitude and of 2.5% for every 5°C above 25°C.

ACOUSTIC POWER LEVEL

ATTENTION: The concrete risk due to the machine depends on the conditions in which it is used. Therefore, it is up to the end-user and under his direct responsibility to make a correct evaluation of the same risk and to adopt specific precautions (for instance, adopting a I.P.D. -Individual Protection Device)

Acoustic Noise Level (L_{WA}) - Measure Unit dB(A): it stands for acoustic noise released in a certain delay of time. This is not submitted to the distance of measurement.

Acoustic Pressure (Lp) - Measure Unit dB(A): it measures the pressure originated by sound waves emission. Its value changes in proportion to the distance of measurement.

The here below table shows examples of acoustic pressure (Lp) at different distances from a machine with Acoustic Noise Level (L_{WA}) of 95 dB(A)

Lp a 1 meter = 95 dB(A) - 8 dB(A) = 87 dB(A)
Lp a 4 meters = 95 dB(A) - 20 dB(A) = 75 dB(A)
Lp a 7 meters = 95 dB(A) - 25 dB(A) = 70 dB(A)
Lp a 10 meters = 95 dB(A) - 28 dB(A) = 67 dB(A)

PLEASE NOTE: the symbol LWA when with acoustic noise values, indicates that the device respects noise emission limits according to 2000/14/CE directive.

The installation and the general advice concerning the operations, are finalized to the correct use of the machine, in the place where it is used as generator group and/or welder.

- Advice to the User about the safety:

☞ **N.B.:** The information contained in the manual can be changed without notice.
Potential damages caused in relation to the use of these instructions will not be considered because these are only indicative.
Remember that the non observance of the indications reported by us might cause damage to persons or things.
It is understood, that local dispositions and/or laws must be respected.

DANGEROUS — This heading warns of an immediate danger for persons as well for things. Not following the advice can result in serious injury or death.

WARNING — This heading warns of situations which could result in injury for persons or damage to things.

CAUTION — To this advice can appear a danger for persons as well as for things, for which can appear situations bringing material damage to things.

IMPORTANT
NOTE
ATTENTION

These headings refer to information which will assis you in the correct use of the machine and/or accessories.

☞ **FIRST AID.** In case the operator shold be sprayed by accident, from corrosive liquids a/o hot toxic gas or whatever event which may cause serious injuries or death, predispose the first aid in accordance with the ruling labour accident standards or of local instructions.

Skin contact	Wash with water and soap
Eyes contact	Irrigate with plenty of water, if the irritation persists contact a specialist
Ingestion	Do not induce vomit as to avoid the intake of vomit into the lungs, send for a doctor
Suction of liquids from lungs	If you suppose that vomit has entered the lungs (as in case of spontaneous vomit) take the subject to the hospital with the utmost urgency
Inhalation	In case of exposure to high concentration of vapours take immediately to a non polluted zone the person involved

☞ **FIRE PREVENTION.** In case the working zone,for whatsoever cause goes on fire with flames liable to cause severe wounds or death, follow the first aid as described by the ruling norms or local ones.

EXTINCTION MEANS	
Appropriated	Carbonate anhydride (or carbon dioxyde) powder, foam, nebulized water
Not to be used	Avoid the use of water jets
Other indications	Cover eventual shedding not on fire with foam or sand, use water jets to cool off the surfaces close to the fire
Particular protection	Wear an autorespiratory mask when heavy smoke is present
Useful warnings	Avoid, by appropriate means to have oil sprays over metallic hot surfaces or over electric contacts (switches,plugs,etc.). In case of oil sprinkling from pressure circuits, keep in mind that the inflamability point is very low.

SYMBOLS IN THIS MANUAL

- The symbols used in this manual are designed to call your attention to important aspects of the operation of the machine as well as potential hazards and dangers for persons and things.
  This symbol is used to draw your attention to the fact that the welder is being used correctly and that the machine or equipment used operates perfectly.

STOP **-** Read absolutely and be duly attentive

HIGH VOLTAGE **-** Attention High Voltage.There can be parts in voltage, dangerous to touch. The non observance of the advice implies life danger.

FIRE **-** Danger of flame or fire. If the advice is not respected fires can happen.

HEAT **-** Hot surfaces. If the advice is not respected burns or damage to things can be caused.

EXPLOSION **-** Explosive material or danger of explosion. in general. If the advice is not respected there can be explosions.

WATER **-** Danger of shortcircuit. If the advice is not respected fires or damage to persons can be caused.

SMOKING **-** The cigarette can cause fire or explosion. If the advice is not respected fires or explosions can be caused.

WRENCH **-** Use of the tools. If the advice is not respected damage can be caused to things and even to persons.

ACCES FORBIDDEN to non authorizad peaple.

Use only with safety clothing -

It is compulsory to use the personal protection means given in equipment.

Use with safe materials only -

Never use water to put out fires on electrical equipment

Use only with non inserted voltage -

It is prohibited to make interventions before having disinserted the voltage.

No smoking -

It is prohibited to smoke while filling the tank with fuel.

Do not refuel -

Do not refuel when the engine is hot.

Switch off the engine prior to refuelling.

Fire -

Fuel can cause fires.

Use only with safety protections -

It is advisable to use all protections while shifting the machine.

Use only with safety protections -

It is advisable to use protections suitable for the different daily checking works.and/or of maintenance.

Exhaust gases -

Exhaust gases from the engine can kill.

Petrol vapours -

Petrol vapours cause fires and can seriously damage your health.

Moving parts -

Moving parts are dangerous. Avoid touching any moving parts with your hands or fingers. Never wear loose clothing which may get trapped by moving parts.

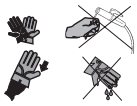
ADVICE BEFORE USE

The operator of the welder is responsible for the security of the people who work with the welder and for those in the vicinity.
The security measures must satisfy the rules and regulations for engine driven welders.
The information given below is in addition to the local security norms.

DANGEROUS

Arc welders can be dangerous. Protect yourself and others from any possible risks which may cause death or serious injury.

- Do not touch any bare wires, leads or contacts as they may be live and there is danger of electric shock which can cause death or serious burns. The electrode and welding cables, etc. are live when the unit is operating.
- Do not touch any electrical parts or the electrode while standing in water or with wet hands, feet or clothes.
- Insulate yourself from the work surface while welding. Use carpets or other insulating materials to avoid physical contact with the work surface and the floor.

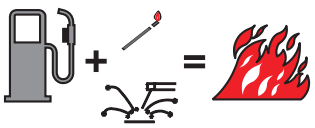


- Do not wind cables around the body.
- Always wear dry, insulating glovers, without holes, and body protection.

Estimate possible electromagnetic problems in the work area taking into account the following indications:

- Telephonic wirings and/or of communication, check wirings and so on, in the immediate vicinity.
- Radio and television receptors and transmettors.
- Computer and other checking devices.
- Critical devices for safety and/or for industrial checks.
- Peapol who, for instance, use pace-maker, hearing-aid for deaf or something and else.
- Devices used for rating and measuring.
- The immunity of other devices in the operation area of the welder. Make sure that other used devices are compatible. If it is the case, provide other additional measures of protection.
- The daily duration of the welding time.

- It is forbidden to weld in rooms containing explosive gases.



- Keep flamable material away from the welding area.
- Do not weld on containers which contain flamable material.
- Do not weld near refuelling areas.
- Do not weld on easily flamable surfaces.

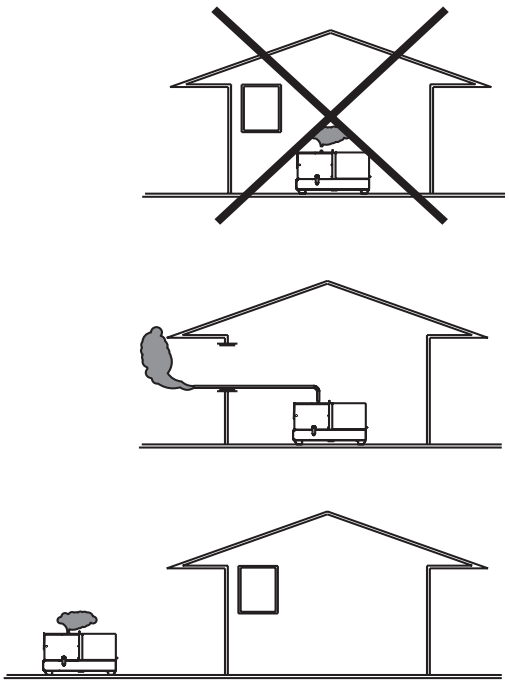
- Protect face and eyes (protective mask with suitable dark lens and side screens), ears and body (non-flamable protective clothers).

- Avoid inhaling fumes by providing a ventilation system or, if not possible, use an approved air breather
- Do not work in closed areas where there is no fresh air flow.

- Do not use the welder to defrost (thaw) pipes.
- Use ear protections if the noise level is high.

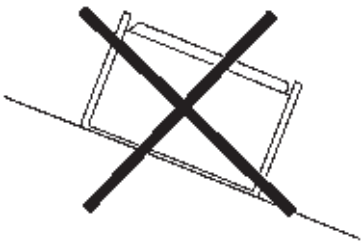
INSTALLATION AND ADVICE BEFORE USE

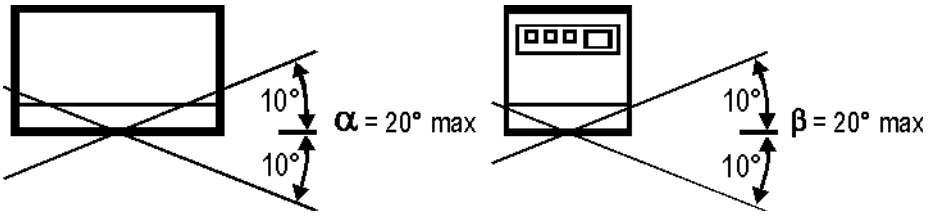
- Use in open space, air swept or vent exhaust gases, which contain the deathly carbone oxyde, far from the work area.



POSITION

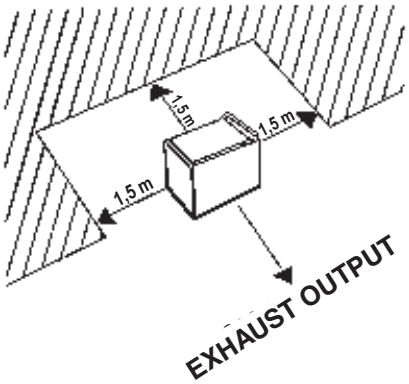
Place the machine on a level surface at a distance of at least 1,5 m from buildings or other plants.





Maximum leaning of the machine (in case of dislevel)

Check that the air gets changed completely and the hot air sent out does not come back inside the set so as to cause a dangerous increase of the temperature.



☞ Make sure that the machine does not move during the work: **block** it possibly with tools and/or devices made to this purpose.

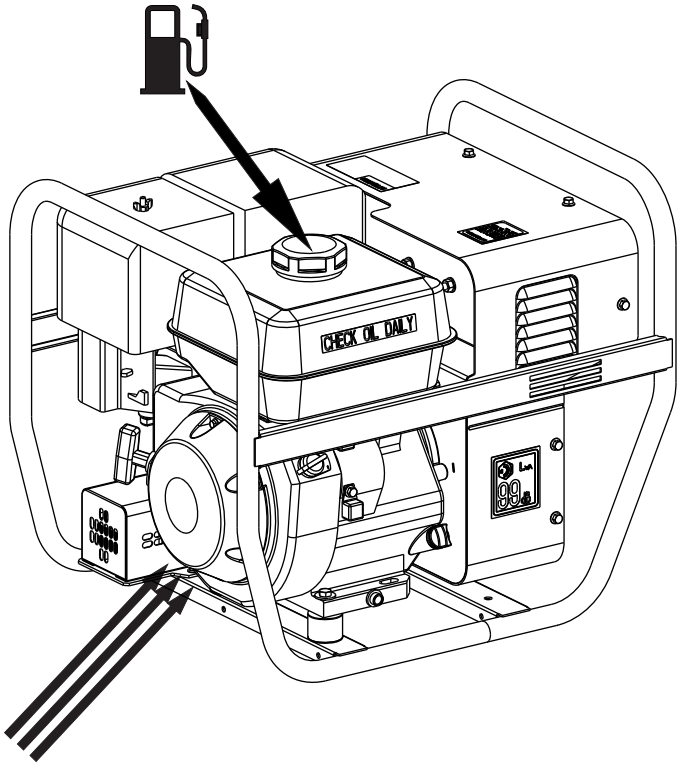
MOVES OF THE MACHINE

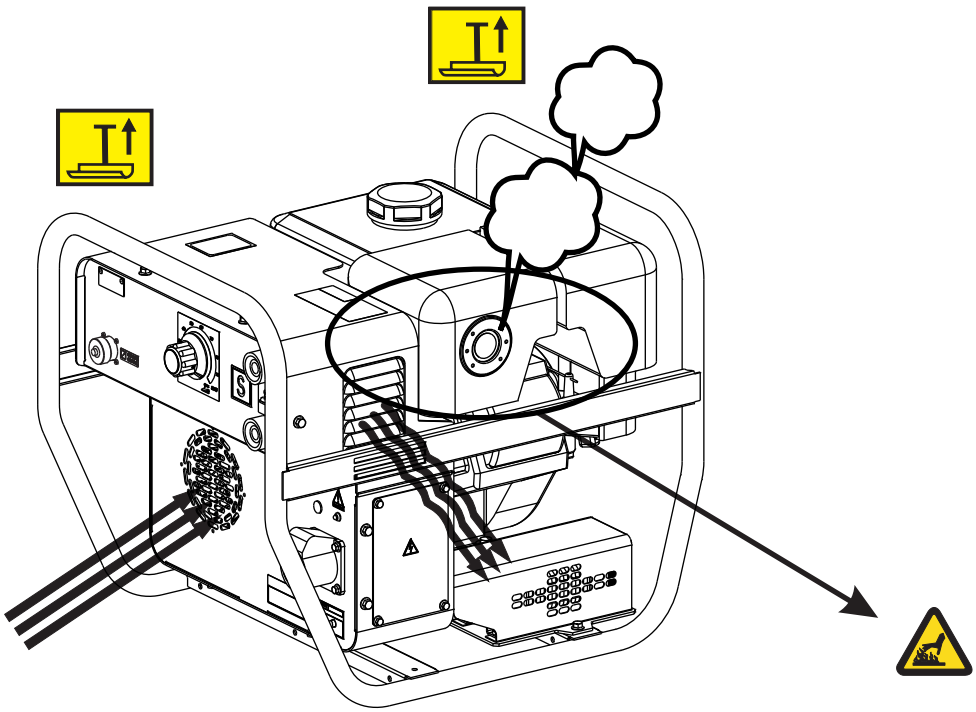
☞At any move check that the engine is **off**, that there are no connections with cables which impede the moves.

PLACE OF THE MACHINE AND/OR EQUIPMENTS

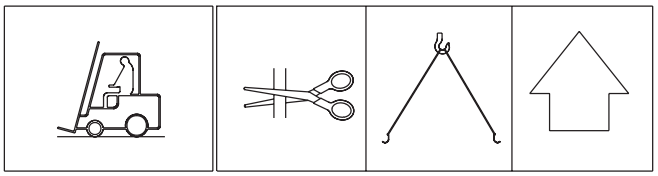
ATTENTION

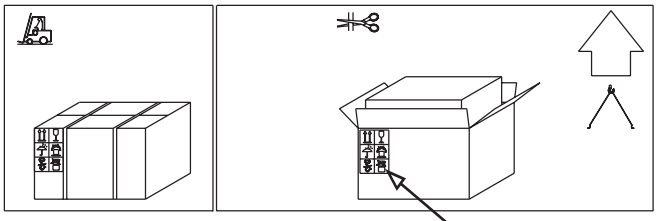
For a safer use from the operator **DO NOT** fit the machine in locations with high risk of flood
Please do not use the machine in weather conditions which are beyond IP protection shown both in the data plate and on page named “technical data” in this same manual.

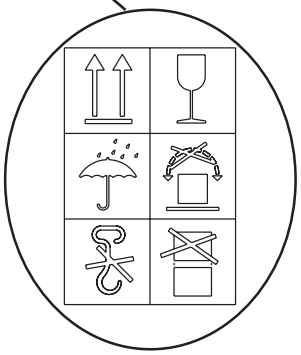

CHECK OIL DAILY



NOTE



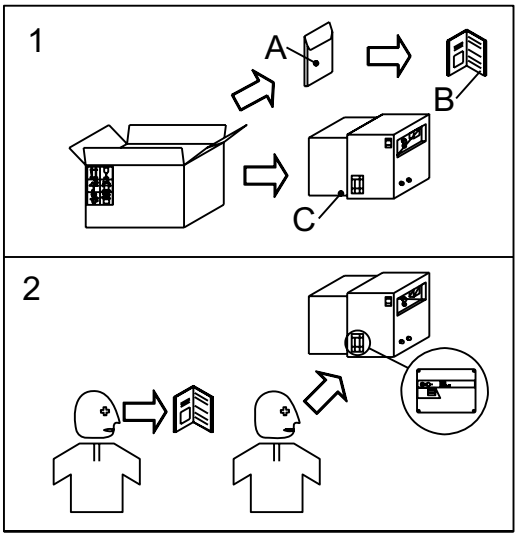




☞ Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with it's packaging, and conforms to local rules and regulations.
When receiving the goods make sure that the product has not suffered damage during the transport, that there has not been rough handling or taking away of parts contained inside the packing or in the set.

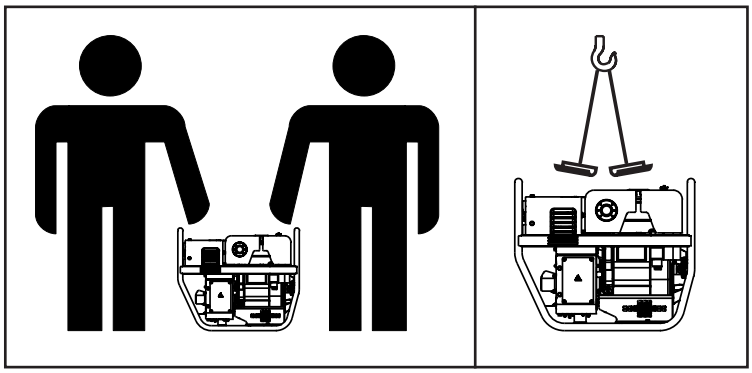
In case you find damages, rough handling or absence of parts (envelopes, manuals, etc.), we advise you to inform immediately our Technical Service.

For eliminating the packing materials, the User must keep to the norms in force in his country.

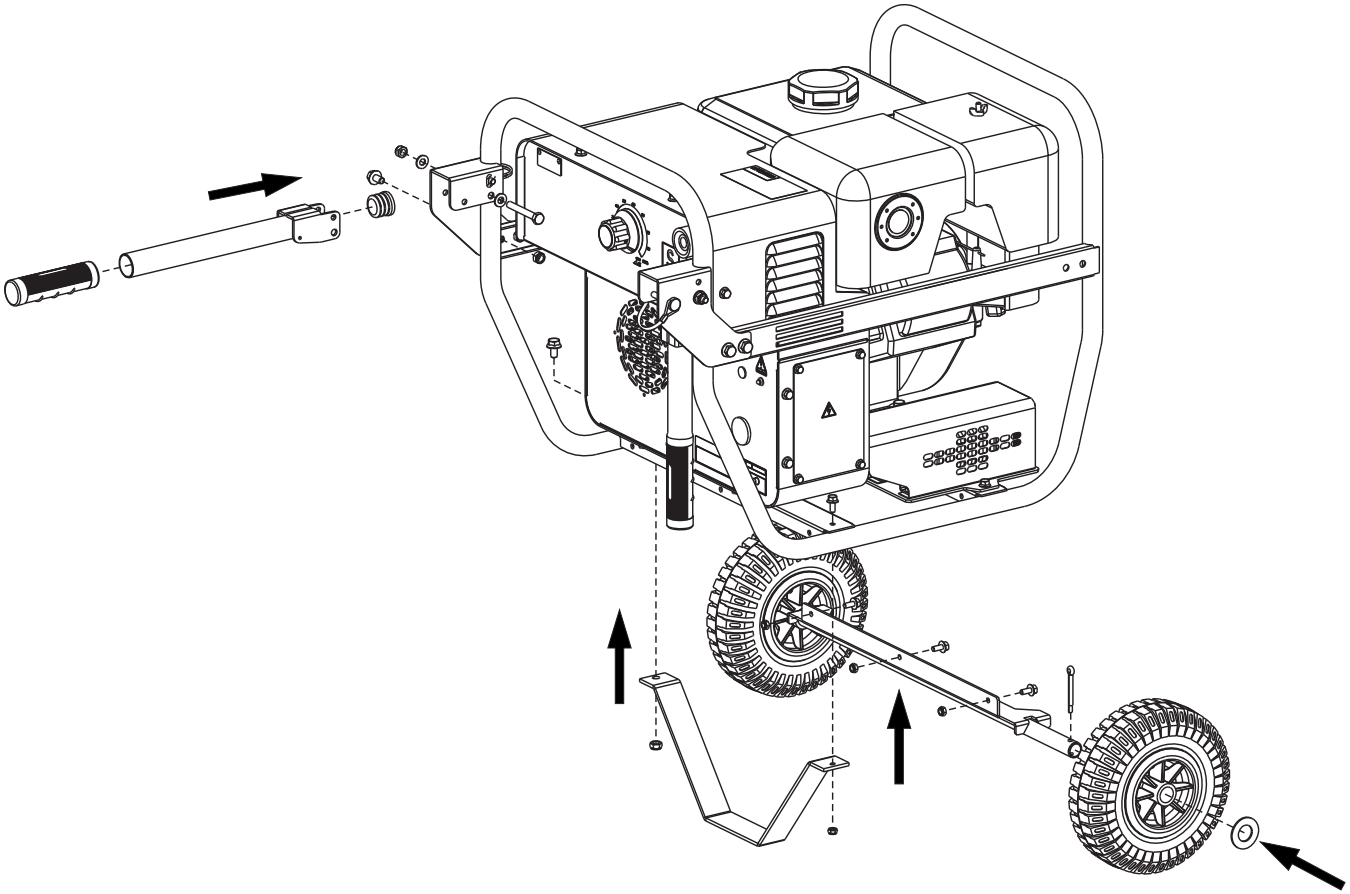


1) Take the machine (C) out of the shipment packing. Take out of the envelope (A) the user's manual (B).
2) Fit the handle as shown in the instructions (fitting: screws and spanner are supplied).
3) Read: the user's manual (B), the plates fixed on the machine, the data plate.

In case you should transport or move the machine, keep to the instructions as per the figures.
Be sure that the lifting devices are: correctly mounted, adequate for the weight of the machine with it's packaging, and conform to local rules and regulations.
Only authorized persons involved in the transport of the machine should be in the area of movement.



***Note*:** Lift the machine and assemble the parts as shown in the drawing



ATTENTION

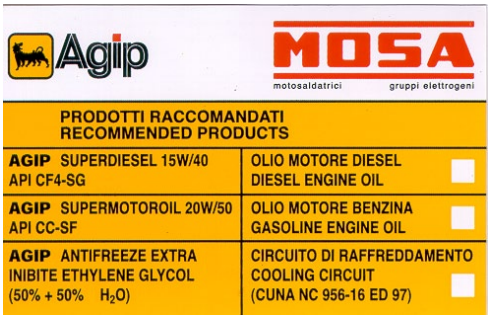
The CTM accessory cannot be removed from the machine and used separately (actioned manually or following vehicles) for the transport of loads or anyway for used different from the machine movements.

LUBRICANT

Please refer to the motor operating manual for the recommended viscosity.

RECOMMENDED OIL

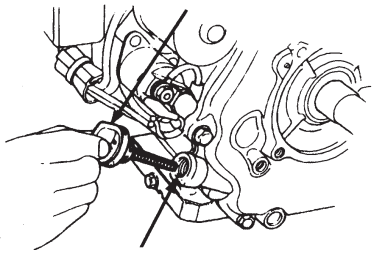
MOSA recommends selecting **AGIP** engine oil.
Refer to the label on the motor for the recommended products.



To check the oil level:

1. Remove the oil-fill tap (24) and clean the dip-stick (23).
2. Insert the dip-stick into the oil filler without screwing it in.
3. If the oil level is low, fill with recommended oil up to the top of the oil filler

Oil fill tap / dip-stick



Upper oil level

MOTORS WITH OIL ALERT DEVICE

The “Oil Alert” system is designed to prevent damage to the motor due to an insufficient quantity of oil in the cup. This system automatically shuts off the motor before the oil level falls below the safety limit. If the motor does not start up again after shutting itself off, check the oil level.

FUEL

ATTENTION

Gasoline is highly flammable. Refuel with motor shut off in a flat surfaced well-ventilated area. Do not refuel in the presence of flames. Avoid spilling fuel.

Any eventual spilled fuel and fumes are flammable. Clean any dispersions of fuel before starting up the motor.

Fill the tank with gasoline for automobiles (preferably lead free or with low lead content in order to reduce deposits in the combustion chamber to a minimum).

For further details on the type of gasoline to use, see the motor operating manual supplied.
Do not fill the tank completely; leave a space of approx. 10 mm between the fuel level and the wall of the tank to allow for expansion.

AIR FILTER

Check that the dry air filter is correctly installed and that there are no leaks around the filter which could lead to infiltrations of non-filtered air to the inside of the motor.

WARNING

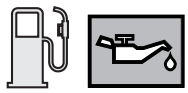
Do not use the machine if it is not in good technical condition

The machine must be in good working order before being used. Defects, especially those which regard the safety of the machine, must be repaired before using the machine.

Do not use without protective devices provided

Removing or disabling protective devices on the machine is prohibited.

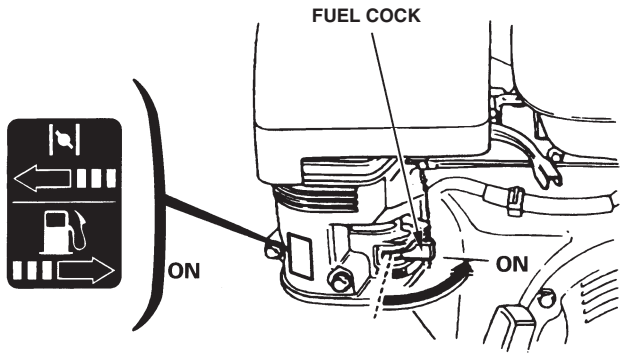
check daily



NOTE

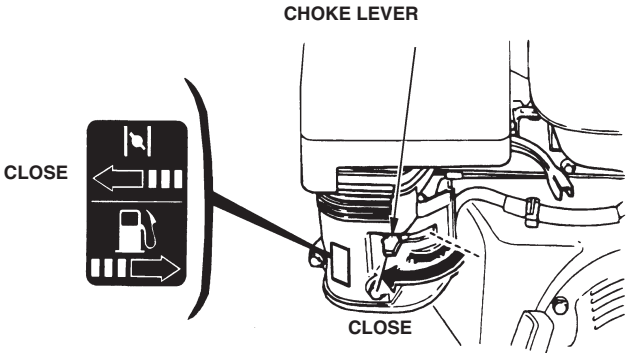
Do not alter the primary conditions of regulation and do not touch the sealed parts.

1. Turn the fuel cock (87) to ON.

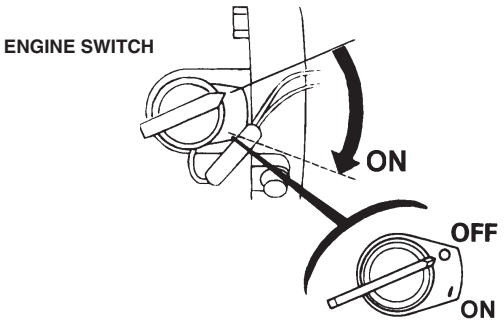


2. Switch the choke control (66) to CLOSE

N.B.: Do not use the air valve if the motor is hot or the air temperature is too high.



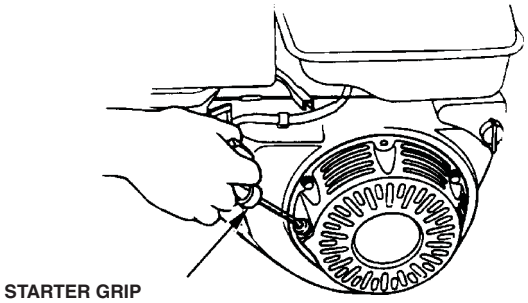
3. Turn the engine switch (28) to the ON position



Lightly pull the start-up knob (73) until meeting resistance, then pull decisively.

☞ **ATTENTION:**

Allow the start-up knob to re-enter slowly, avoiding having it knock against the motor and thereby damaging the start-up system.



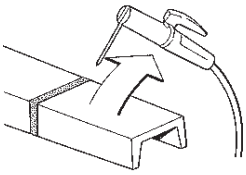
4. When the engine is started the machine reaches maximum engine speed immediately (4000 rpm) for 6/7 seconds, after which the engine speed automatically decreases to minimum (2000 rpm). The minimum is set by the solenoid which acts on the accelerator lever.

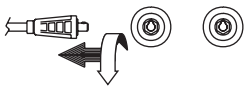
5. The engine reaches maximum speed only when current is drawn in welding or auxiliary power mode.

☞ Before stopping the engine **it is compulsory:**

- Disconnect or close any power load connected to the system's auxiliary generation.

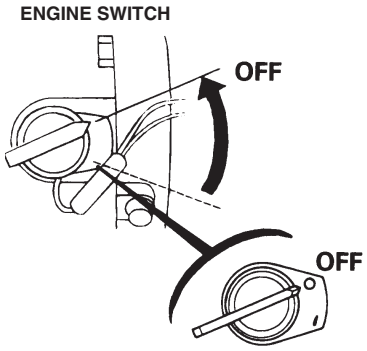
- Interrupt welding.



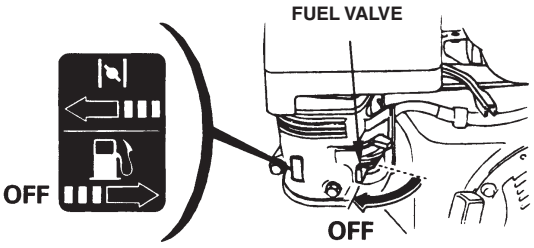


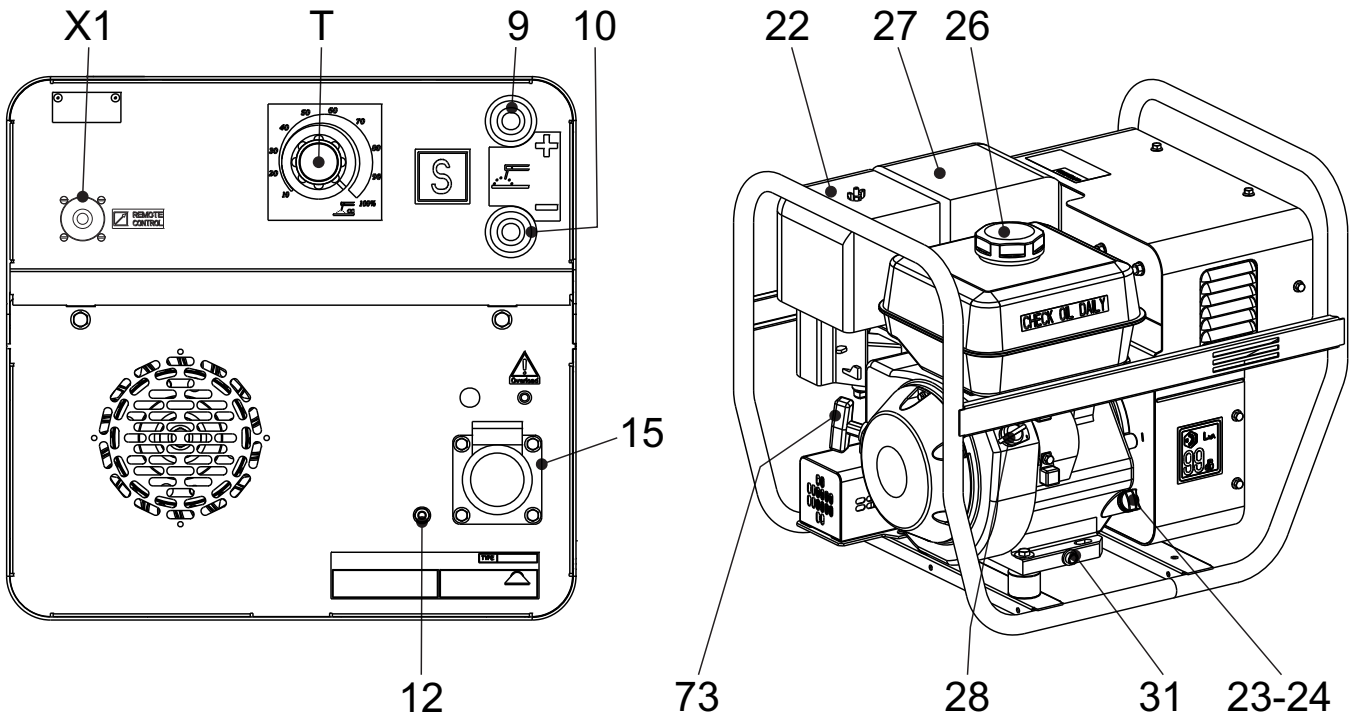
To shut down the motor:

For shut down the motor in case of emergency, turn the motor switch (28) to OFF.
In normal conditions, wait for the engine to reach minimum speed automatically 6/7 seconds after the load has been excluded. Turn the engine in these conditions for a few minutes so that it can cool down and then turn the engine switch (28) to OFF.



Turn the fuel valve to the OFF position.





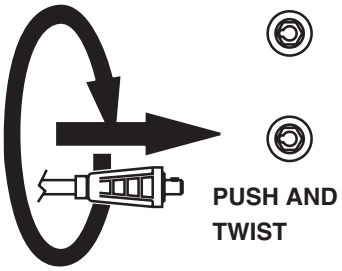
Pos.	Descrizione	Description	Description	Descripción
9	Prese di saldatura (+)	Welding sockets (+)	Prises de soudage (+)	Tomas de soldadura (+)
10	Prese di saldatura (-)	Welding sockets (-)	Prises de soudage (-)	Tomas de soldadura (-)
12	Presa di messa a terra	Earth terminal	Prise de mise à terre	Toma de puesta a tierra
15	Presa di corrente in c.c.	d.c. socket	Prises de courant en c.c.	Toma de corriente en c.c
22	Filtro aria motore	Engine air filter	Filtre air moteur	Filtro aire motor
23	Asta livello olio motore	Oil level dipstick	Jauge niveau huile moteur	Aguja nivel aceite motor
24	Tappo caricamento olio motore	Engine oil reservoir cap	Bouchon remplissage huile moteur	Tapón llenado aceite motor
26	Tappo serbatoio	Fuel tank cap	Bouchon réservoir	Tapón depósito
27	Silenziatore di scarico	Muffler	Silencieux d'échappement	Silenciador de descarga
28	Comando stop	Stop control	Commande stop	Mando stop
31	Tappo scarico olio motore	Oil drain tap	Bouchon décharge huile moteur	Tapón vaciado aceite motor
73	Comando manuale avviamento	Starting push button	Commande manuelle démarrage	Mando manual arranque
T	Regolatore corrente di saldatura	Welding current regulator	Régulateur courant soudage	Regulador corr. de soldadura
X1	Presa per comando a distanza	Remote control socket	Prise pour télécommande	Toma para mando a distancia

WARNING

Areas for which access by non-authorized personnel is **forbidden** are:
- the control panel (at the front) - the endothermic motor discharge.

CONNECT WELDING CABLES

Insert the welding cable plugs completely in the sockets, turning clockwise to lock them in place.



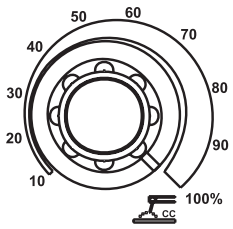
Connect the earth clamp to the negative pole and the electrode holder to the positive.

☞ Pay attention to the two polarities on the welding circuit, which must not come into electrical contact with each other.

- Carefully tighten the output cables to the bushings; if loose, they can cause problems of overheating and damage the bushings, cables, etc.
- Make certain the grounding pincer is connected as near as possible to the work station.

ADJUSTING THE WELDING CURRENT

The welding current is regulated by turning knob "T" continuously. If set to the minimum (turned fully in an anticlockwise direction) it provides a current of approximately 30 A; if set to the maximum (turned fully in a clockwise direction) it gives a maximum current of approximately 200A.



RECOMMENDED ELECTRODES

All the electrodes on the market can be used.

ATTENTION

To reduce the risk of electromagnetic interference, keep the welding cable length short and keep them on or near the ground. If possible, welding operations should not be done near sensitive electronic devices. If interference continues to occur, adopt additional measures: shift the group, use shielded cables, line filters, shield the entire work area.
If the above solutions do not suffice, consult our Technical Servicing Department.

AUTO IDLE

Operation

When the engine is switched on it immediately reaches a maximum speed of 4000 rpm for approximately 6/7 seconds for easy start up, after which it automatically decreases and idles at 2000 rpm. It remains at this speed until current is drawn when set to weld or auxiliary power.
When set to weld mode the machine reaches maximum engine speed as soon as there is minimum contact between the tip of the electrode and the piece to be welded and also when set to generation drawing a minimum of 250 – 300 W
The machine returns to minimum 6/7 seconds later if power is not drawn during welding or generation.

Checking and adjusting idling speed

- Check idling speed when COLD;
- When the engine is switched on it reaches maximum speed; after 6/7 seconds it decreases automatically to idle. Check the speed when the engine idles;
- The idling speed corresponds to 47-50 Vdc at the welding sockets or the equivalent at 2650 rpm.

Minimum welding voltage TOO LOW

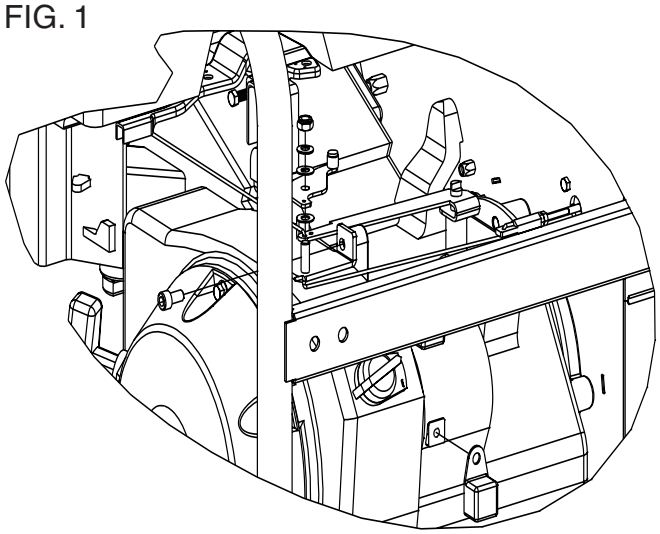
- From Fig. 1 proceed as follows:
- when the machine idles (engine cold)
- Keep pin A locked (8 mm spanner) and unscrew nut B (7 mm spanner)
- Again with pin A locked, turn nut C clockwise (7 mm spanner) 1 - 3 mm: The more it is extended the more the idle speed increases
- Tighten nut B on pin A and check the idling speed.

Minimum welding voltage TOO HIGH

- From Fig. 1 proceed as follows:
- When the machine idles (engine cold)
- tKeep pin A locked (8 mm spanner) and unscrew nut B 1-3 mm (7 mm spanner)
- Again with pin A locked, turn nut C anticlockwise (7 mm spanner) until nut B touches pin A
- Tighten nut B against pin A and check that the idling speed is correct.

Adjusting the maximum engine speed

FIG. 1

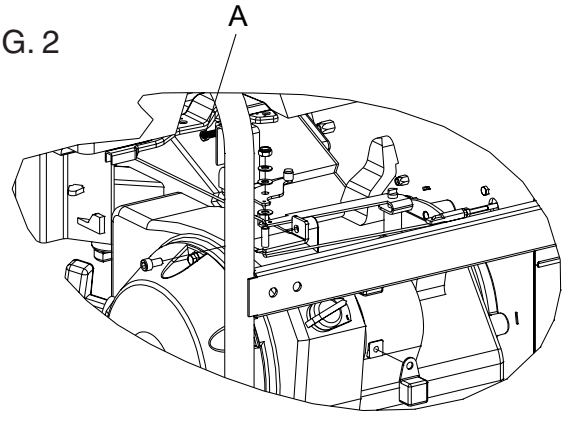


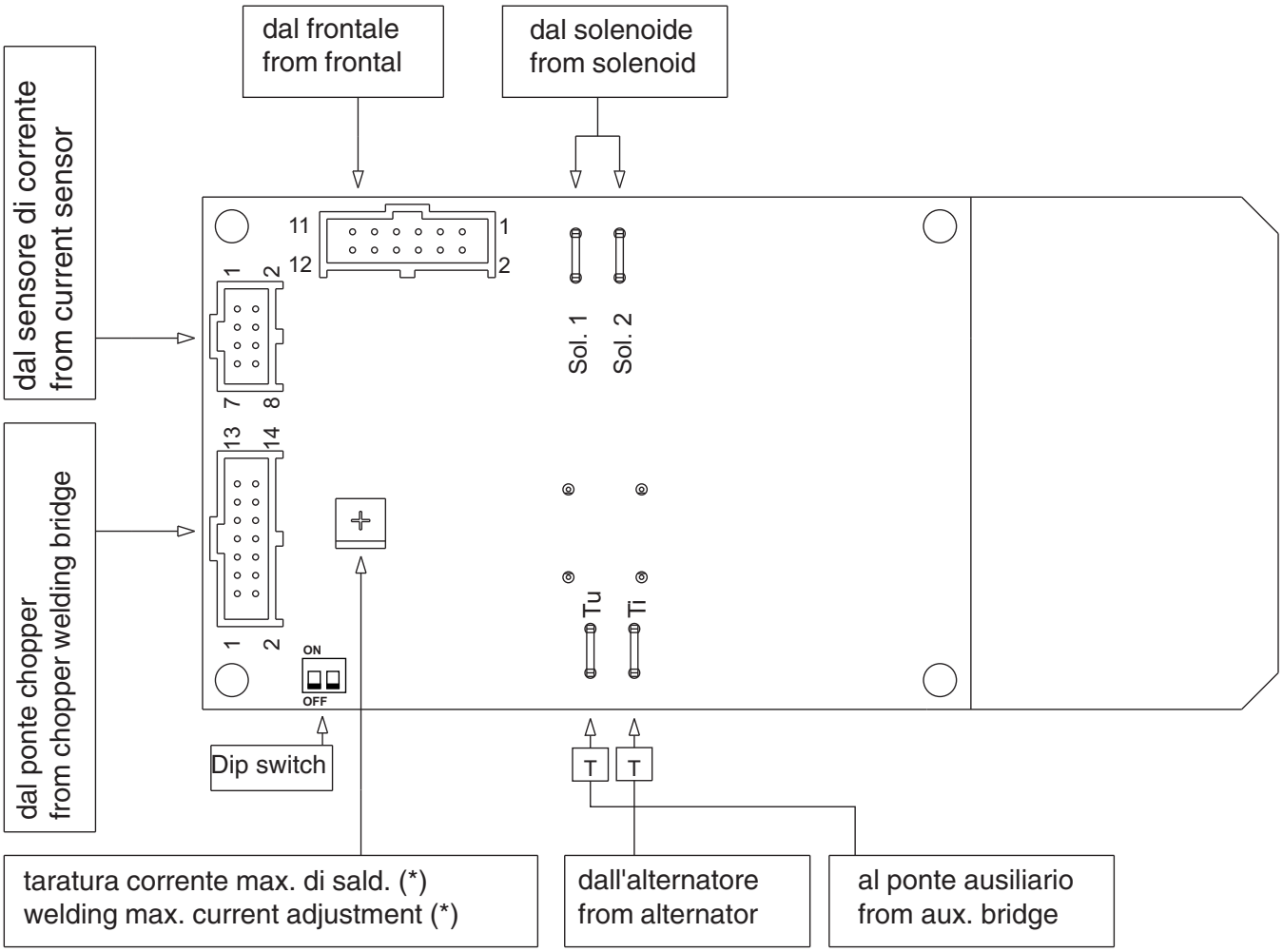
Calibration of maximum RPM (Revolutions Per Minute)

To check that the maximum engine RPM is correct, simply measure that the welding tension with no-load (not under load) at the maximum RPM must be between 69-71V.

Adjustment is made by the screw (A) Fig. 2.; first, however, the accelerator lever lock nut must be loosened, then carry out the adjustment, turning the screw (A) clockwise to reduce the maximum and anti-clockwise to increase it. Once the calibration has been carried out, re-tighten the accelerator lever lock nut.

FIG. 2





*) Tutte le volte che viene sostituita o la scheda o il sensore di corrente è necessario procedere ad una verifica della massima corrente di saldatura e eventualmente procedere ad una sua taratura nel seguente modo:
- Fissare la scheda sulla lamiera porta scheda, collegare tutti i cavi e connettori.
- Porre i Dip Switch secondo la figura. Dip Switch
- Ruotare il trimmer sulla scheda tutto in senso antiorario.
- Verificare che al minimo del potenziometro corrisponda il minimo della manopola.
- Porre la manopola di saldatura al minimo e avviare il motore. Lasciare che la macchina vada al minimo poi fare un corto circuito tra il + e - tramite i cavi di saldatura.
- Ruotar e la manopola di saldatura al massimo.
- Ruotare lentamente il trimmer in senso orario affinché la corrente di saldatura arrivi a 200A.

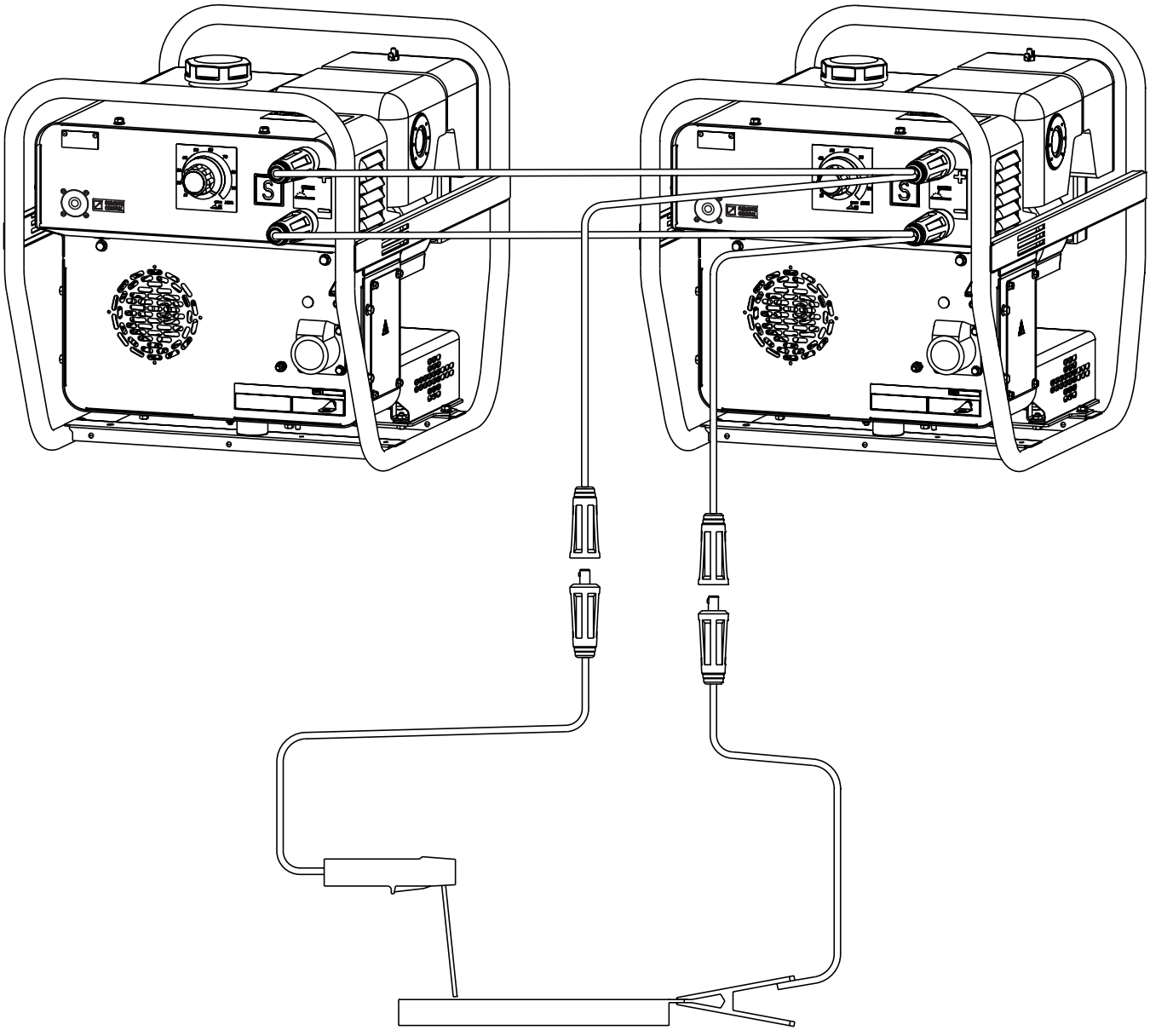
*) Every time either the board or the current sensor is changed, it is necessary to check the max. welding current and, if it is the case, to set it as follows:
- Attach de pcb on his iron plate, connect all wives and all connectors.
- Put the dip-switch as drawing. Dip Switch
- Rotate the trimmer on the board fully anticlockwise.
- Check that to the minimum of the potentiometer corrisponds the minimum of the knob.
- Put the welding knob to the minimum and start the engine.
- Let the machine idle, then shortcircuit between the + and - welding sockets through the welding cables.
- Rotate the welding knob to the maximum.
- Slowly rotate the trimmer clockwise so that the welding current reaches 200 A.

How to put two machines in parallel:

from the front panels of the machines connect the two positives welding sockets(+) between themselves and the two negative welding sockets bethween themselves.
To effect the connection ask for the accessory K2X150.

ATTENTION: use fit cables and tight at the connection point.

How to proceed:
- start the machine putting the two welding handles (T) in the wanted position (half of the total current);
- put in parallel with the right cables;
- proceed with welding.



WARNING

It is absolutely forbidden to connect the unit to the public mains and/or another electrical power source.

Areas for which access by non-authorized personnel is **forbidden** are:
- the control panel (at the front) - the endo-thermic motor discharge.

AUXILIARY GENERATION IN AC 230V/50Hz

The auxiliary output is drawn by means of a 3 pole socket, the two poles are live, phase and neutral, plus the earth for the machine.

The single phase generation of the machine was designed to supply small power tools (grinders, drills etc.) to assist the welding operations with a quick, safe connection without the need to connect to earth. In addition, supplying only one tool at a time, the protection against indirect contact is assured by “electrical separation”.

Therefore, the machine MUST NOT be intentionally connected to earth, attaching cables must be of 3 wires and the electrical equipment on which it being used must have an extension length limited to 100-200 metres. This limitation of circuit extension length is fundamental for safety.

The cables must be SUITED to the environment in which they are to be used. Bear in mind that at temperatures below 5°C PVC cables become rigid and the PVC insulation tends to split at the first crease.

Using double insulated equipment is advisable, this is identifiable by the symbol ⧈ and for having no earth facility.

If the machine is designed to supply circuits which are particularly complex or in an area with potential electrical risk, it is required to interpose a complete electrical distribution panel, equipped with all electrical protections required, between the plug and loads.

For example: you can use a distribution system TN-S. In this case one of the phases, used as a neutral must be grounded; a bipolar 30mA differential switch (GFI) must be mounted inside the electrical box, before the sockets to which loads are connected; the terminal in the frontal panel of the generating set near the socket is to be used as earth connection, wiring it to the ground of the electrical plant with which the machine is going to work.

WARNING: bound the neutral to frame BEFORE the GFI.

Problem	*Possible cause*	*Solution*
The motor does not start up, or starts up and then stops immediately	1) Engine switch (28) at position OFF	1) Position switch to ON
	2) Lack of or insufficient oil in the motor	2) Refill or top off
	3) Faulty motor stopping device (oil-alert)	3) Replace
	4) Lack of fuel in tank or fuel tap closed	4) Refill the tank. Open the fuel tap
	5) Dirty or faulty spark plug	5) Clean or check and eventually replace
	6) Cold motor	6) Hold down the CHOKE button, after start-up, for a longer period of time
	7) Other causes	7) Consult the motor Operating Manual.
No current under no-load conditions in weld mode	1) Chopper welding bridge broken	1) Use a multimeter to test that there are 3 Kohms between pins 1-2; if NOT replace the bridge
	2) Faulty circuit	2) Replace
	3) Faulty alternator	3) Disconnect the welding and auxiliary power cables. Use a voltmeter to check that there is 48 Vac at the outputs in weld and approximately 145 Vac between the outputs in generation. Carry out the check when the engine idles (disconnect one of the two wires to the solenoid)
No current under no-load conditions in auxiliary power mode	1) Fuse open	1) replace the fuse 10A retarded for version 230V 15A retarded for version 110V
	2) Auxiliary power diode bridge broken	2) Use a multimeter to check the 2 single phase diode bridges on the auxiliary power
	3) Faulty circuit	3) Replace
	4) Faulty alternator	4) Disconnect the welding and auxiliary power cables. Use a voltmeter to check that there is 48 Vac at the outputs in weld and approximately 145 Vac between the outputs in generation. Carry out the check when the engine idles (disconnect one of the two wires to the solenoid).
Incorrect minimum voltage under no-load conditions	1) Incorrect solenoid adjustment	1) Adjust the solenoid as shown on page M34.

Problem	*Possible cause*	*Solution*
Incorrect maximum voltage under no-load conditions	1) Incorrect maximum engine speed	1) Adjust the maximum engine speed as shown on page M34.
Engine always at idle speed	1) Faulty circuit	1) Replace
Engine always at maximum speed	1) faulty circuit 2) Faulty solenoid 1) Engine	1) Dirty petrol filter, dirty air filter, dirty carburetor. See engine instruction booklet.
Insufficient power during welding or generation	1) alternator windings not	1) Replace; 2) Check that the resistance of the solenoid winding is approximately 10 ohm.
Irregular or inconsistent welding current	insulated from earth 2) welding chopper bridge not insulated from earth 3) power cables not insulated from earth 4) faulty circuit	1) Disconnect all the outputs; 3 for welding which go to the chopper bridge and 4 for auxiliary power which go to the circuit board. Use a multimeter to check the insulation of the alternator; 2) disconnect the 3 welding cables, the + and - for welding, the black wire and the connector which go to the circuit board, Use a multimeter to check that the bridge is insulated from the earth. 3) check that the cables inside the aluminium casting, are properly insulated; 4) Replace

RESISTENCE OF WINDING 110V/230V

OUTPUT	Ω (ohm)	NOTE
Output in weld mode Between green / black cable Between green / red cable Between black / red cable	 0,011 0,011 0,011	
Auxiliary power outputs Between the black cables	 0,300	 Value measured alternating the cables
Auxiliary power outputs Between the brown cables	 0,300	 Value measured alternating the cables

ATTENTION

MOVING PARTS can injure

- Maintenance and repair work should only be done by **qualified** personnel.
- Stop the engine before doing any work on the machine. If for any reason the machine must be operated while working on it, **be careful not to touch** rotating parts, hot surfaces, live wires, etc. which may be unprotected.
- Remove protective guards only when necessary to perform maintenance and replace them immediately after the maintenance is completed.
- Use suitable tools and wear suitable clothes.
- Do not modify the machine without prior authorization

HOT surface can hurt you

MAINTENANCE OF THE MACHINE

Maintenance refers to all operations regarding the control and replacement of mechanical and electrical parts subject to wear. In addition it refers to the control and topping up or replacement of fluids such as fuel, oil and the regular cleaning of the machine.

Repairs refers to the substitution of worn or damaged parts and repairs should be carried out by Authorized Service Centres.

Refer to the Engine Manufacturer's Manual for the maintenance instructions for the engine. Periodic maintenance should be performed according to the schedule shown in this manual.

On a regular basis check that there are no obstructions in the aspiration/exhaust ducts of the alternator, the engine or the housing which could restrict the flow of cooling air.

DRY AIR FILTER

Replace the air filter cartridge every 200 hours under normal conditions and every 100 hours in dusty environments.

PERMANENT MAGNET ALTERNATOR

No maintenance is necessary, as the alternator has no brushes or slip rings, and there are no devices for regulation of the output.

WARNING LABELS AND DECALS

Check warning labels and decals once a year and **replaced** if missing or unreadable.

CABLES AND CONNECTIONS

Periodically check the condition of the cables and tighten the connections.

IMPORTANT

When carrying out maintenance operations be careful to avoid polluting the environment with the materials used during maintenance. Follow all local health and safety regulations.

☞ Have **qualified** personnel prepare the machine for the cust-off.

STORAGE

In case the machine will not be used for more than 30 days, it should be stored in a suitable area where it is protected from the elements to prevent rusting, corrosion and other damage to the machine.

ENGINE

Run the engine until it stops from lack of fuel.

For long periods of storage, refer to the engine manufacturer's manual.

Clean the machine carefully.

Cover the machine with a plastic cover and store in a dry place.

In case of necessity for first aid and fire prevention, see page M2.

IMPORTANT

In the storage or cust-off operations avoid that polluting substances, liquids, exhausted oils, etc. bring damage to people or things or can cause negative effects to surroindings, health or safety respecting completely the laws and/or dispositions in force in the place.

CUST-OFF

As cust off we intend all operations to be made, at utilizer's care, at the end of the use of the machine.

This comprises the dismantling of the machine, the subdivision of the several components for a further reutilization or for getting rid of them, the eventual packing and transportation of the eliminated parts up to their delivery to the store, or to the bureau encharged to the cust off or to the storage office, etc.

The several operations concerning the cust off, involve the manipulation of fluids potentially dangerous such as: lubricating oil.

The dismantling of metallic parts liable to cause injuries or wounds, must be made wearing heavy gloves and using suitable tools.

The getting rid of the various components of the machine must be made accordingly to rules in force of law a/o local rules.

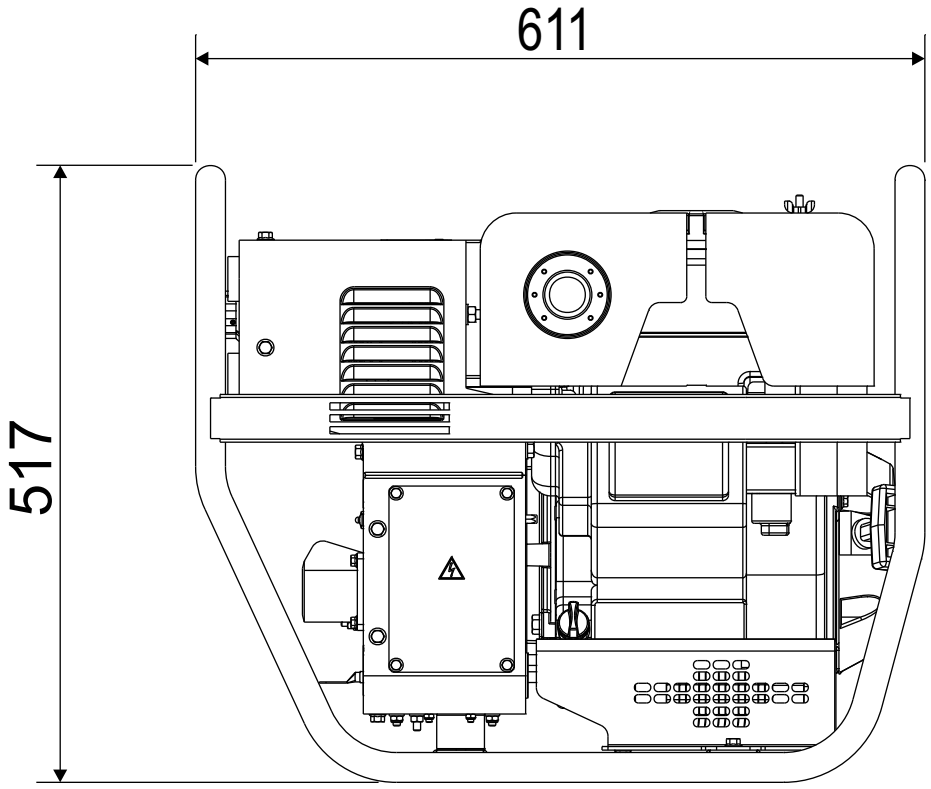
Particular attention must be paid when getting rid of: lubricating oils, **inflamable liquids such as fuel**.

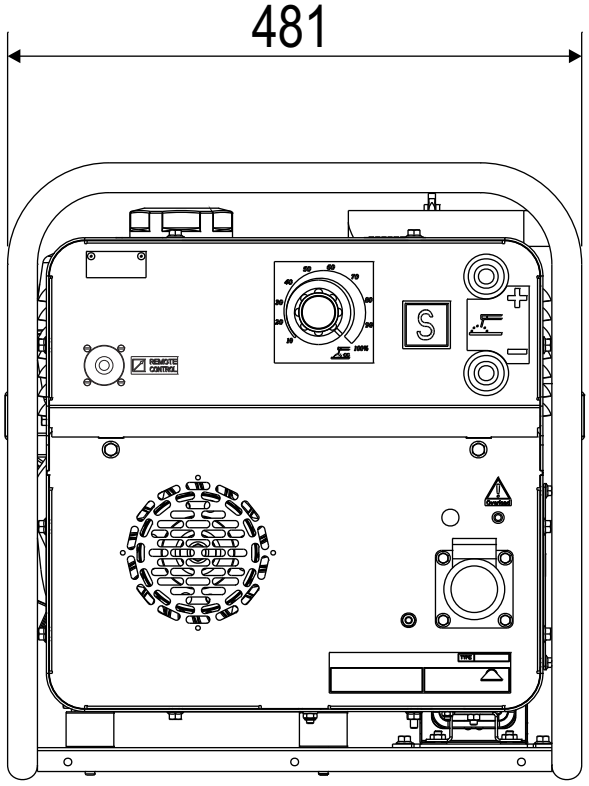
The machine user is responsible for the observance of the norms concerning the environment conditions with regard to the elimination of the machine being cust off and of all its components.

In case the machine should be cust off without any previous disassembly it is however compulsory to remove:

- tank fuel
- engine lubricating oil

NOTE: MOSA is involved with custing off the machine **only** for the second hand ones, when not reparable.
This, of course, after authorization.


611
517


481
S
REMOTE CONTROL

Legenda schema elettrico

A : Alternatore
H : Presa 230V monofase
I : Presa 110V monofase
R : Unità controllo saldatura
T : Regolatore corrente saldatura
Y : Ponte diodi saldatura
Z : Prese di saldatura
W : Reattore c.c.
F1 : Elettromagnete acceleratore
S2 : Trasmettitore livello olio
F3 : Pulsante stop
G3 : Bobina accensione
H3 : Candela accensione
W6 : Sensore di hall
R8 : Inverter
S8 : Led Overload
Z8 : Scheda comando a distanza

Electrical system legende

A : Alternator
H : 230V 1phase socket
I : 110V 1-phase socket
R : Welding control PCB
T : Weldin current regulator
Y : Welding diode bridge
Z : Welding sockets
W : D.C. inductor
F1 : Acceleration solenoid
S2 : Oil level transmitter
F3 : Stop push-button
G3 : Ignition coil
H3 : Spark plug
W6 : Hall sensor
R8 : Inverter
S8 : Overload led
Z8 : Remote control PCB

Legende des schemas electriques

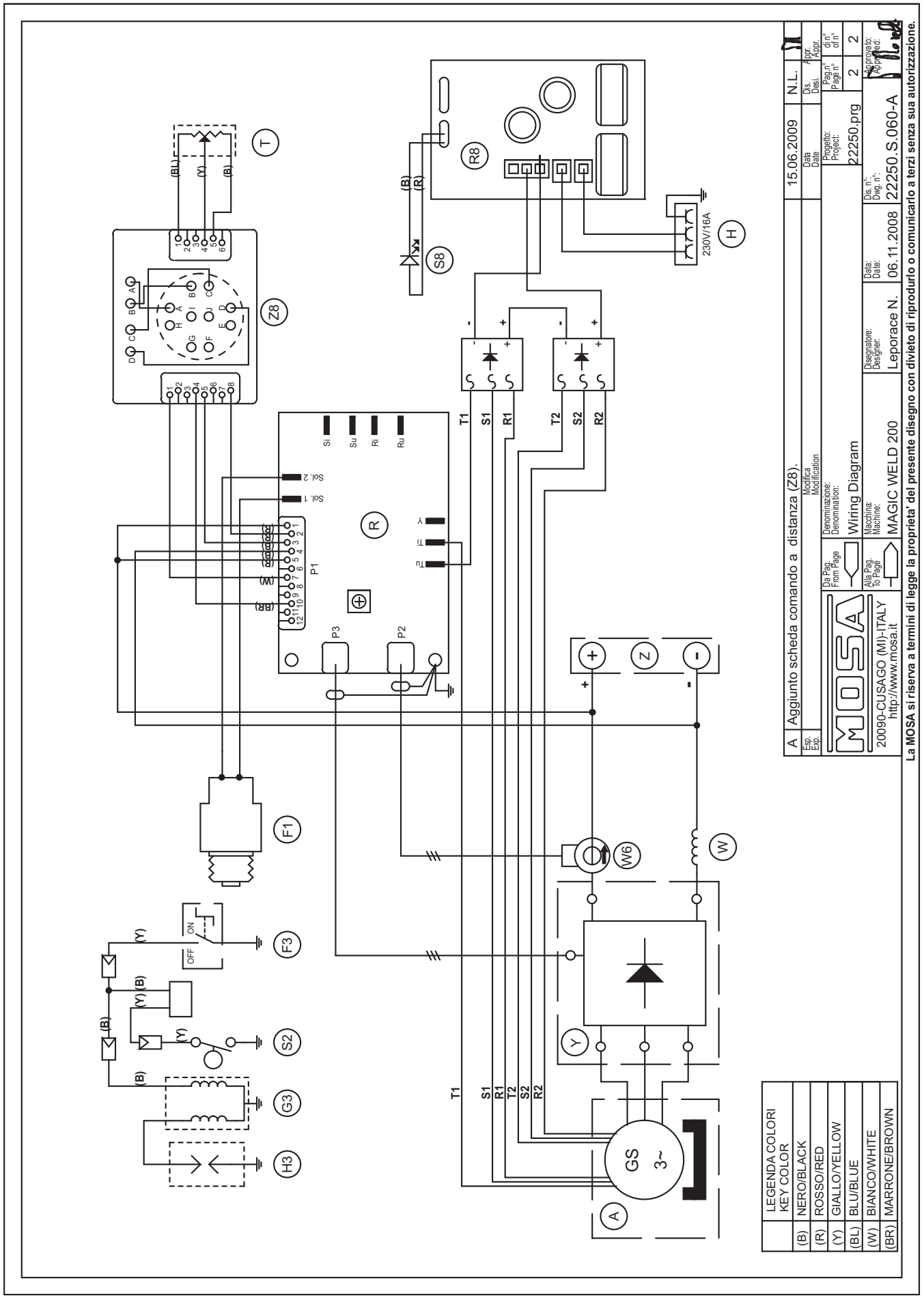
A : Alternateur
H : Prise 230V monophasé
I : Prise 110V monophasé
R : Unite contrôle soudage
T : Régulateur courant soudage
Y : Pont diodes soudage
Z : Prises de soudage
W : Rèactance c.c.
F1 : Electro-aimant accélérateur
S2 : Transmetteur niveau huile
F3 : Bouton stop
G3 : Bobine allumage
H3 : Bougie allumage
W6: Senseur de hall
R8 : Inverteur
S8 : Voyant Surcharge
Z8 : Télécommande fiche

Stromlaufplan-Referenzliste

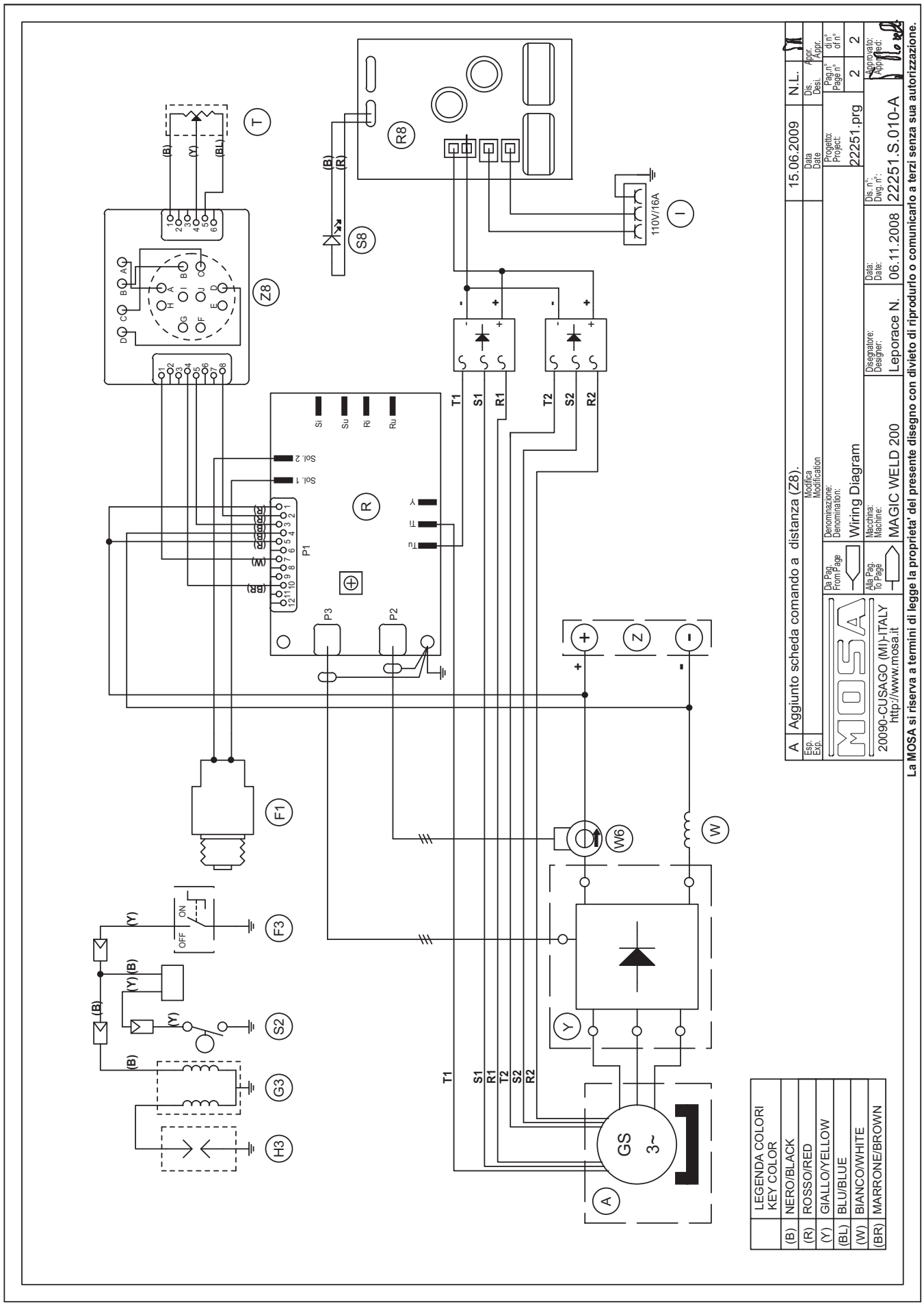
A : Generator
H : Steckdose 230V 1-phasig
I : Steckdose 110V 1-phasig
R : Steuerplatine Schweißstrom
T : Schweißstromregler
Y : Diodenbrücke Schweißstrom
Z : Schweißbuchsen
W : DC-Drossel
F1 : Elektromagnet Motordrehzahl
S2 : Ölstandssensor
F3 : Taste Stopp
G3 : Zündspule
H3 : Zündkerze
W6 : Hall-Sensor
R8 : Inverter
S8 : Led Überbelastung
Z8 : Fernbedienungsplatine

Leyenda esquema eléctrico

A : Alternador
H : Toma 230V monofásica
I : Toma 110V monofásica
R : Unidad control soldadura
T : Regulador corriente soldadura
Y : Puente diodos soldadura
Z : Tomas de soldadura
W : Reactor c.c.
F1 : Electromagnetismo acelerador
S2 : Captador nivel aceite
F3 : Pulsador stop
G3 : Bobina encendido
H3 : Bujía encendido
W6 : Sensor de entrada
R8 : Inverter
S8 : Led Overload
Z8 : Mando a distancia tarjeta



26/11/08 22250-I


LEGENDA COLORI
KEY COLOR
(B) NERO/BLACK
(R) ROSSO/RED
(Y) GIALLO/YELLOW
(BL) BLU/BLUE
(W) BIANCO/WHITE
(BR) MARRONE/BROWN
A Aggiunto scheda comando a distanza (Z8).
Esp. Exp.
Modifica Modification
15.06.2009
Data Date
N.L.
Dis. Desi.
Appr. Appr.
MOSA
20090-CUSAGO (MI)-ITALY
http://www.mosa.it
Da Pag. From Page
Alla Pag. To Page
Denominazione: Denomination:
Wiring Diagram
Macchina: Machine:
MAGIC WELD 200
Disegnatore: Designer:
Leporace N.
Data: Date:
06.11.2008
Progetto: Project:
22251.prg
Pag.n° Page n°
2
di n° of n°
2
Dis. n°: Dwg. n°:
22251.S.010-A
Approvato: Approved:
La MOSA si riserva a termini di legge la proprieta' del presente disegno con divieto di riprodurlo o comunicarlo a terzi senza sua autorizzazione.
T
R8
S8
Z8
R
P1
P2
P3
F1
F3
S2
G3
H3
W6
W
Y
GS
3~
A
110V/16A
T1
S1
R1
T2
S2
R2

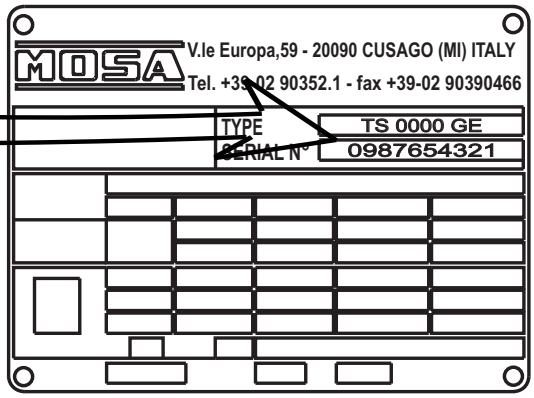
MOSA guarantees that any request for spare parts will be satisfied.

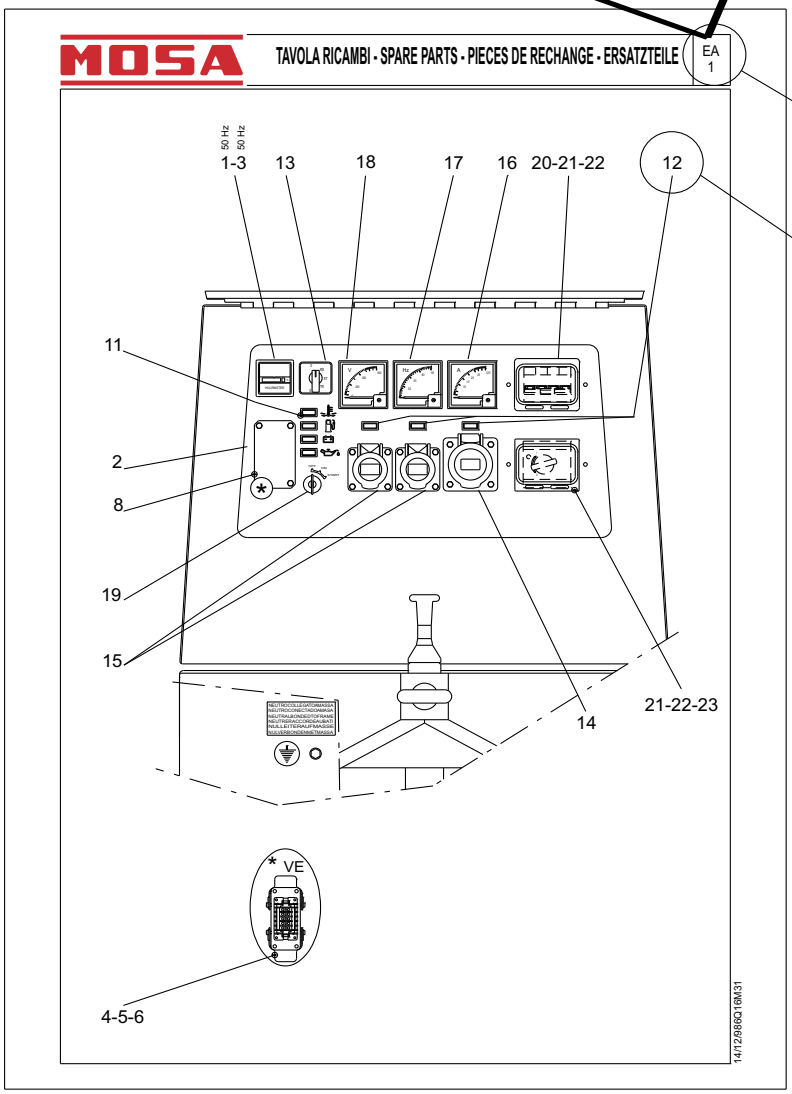
To keep the machine in full working order, when replacement of MOSA spare parts is required, always ask for genuine parts only.

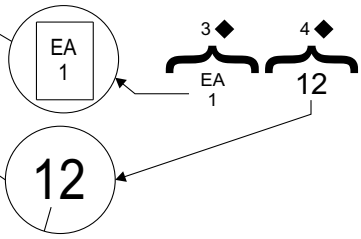
☞ The requested data are to be found on the data plate located on the machine structure, quite visible and easy to consult. ✹

When ordering the spare parts, it is recommended to indicate:

1) ✹ serial number
2) ✹ model of welder and/or generating set
3) ◆ n. table
4) ◆ n. position
5) quantity

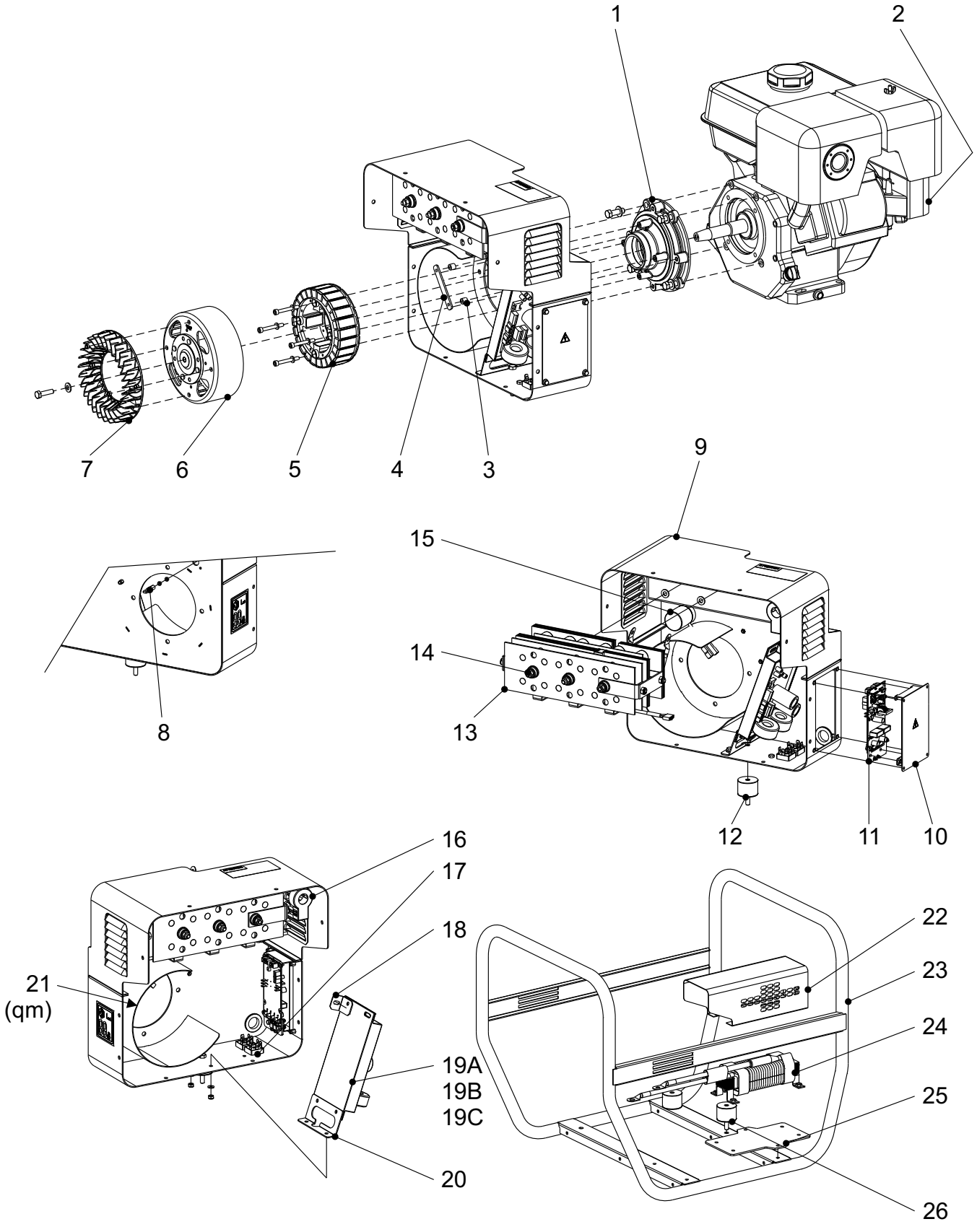






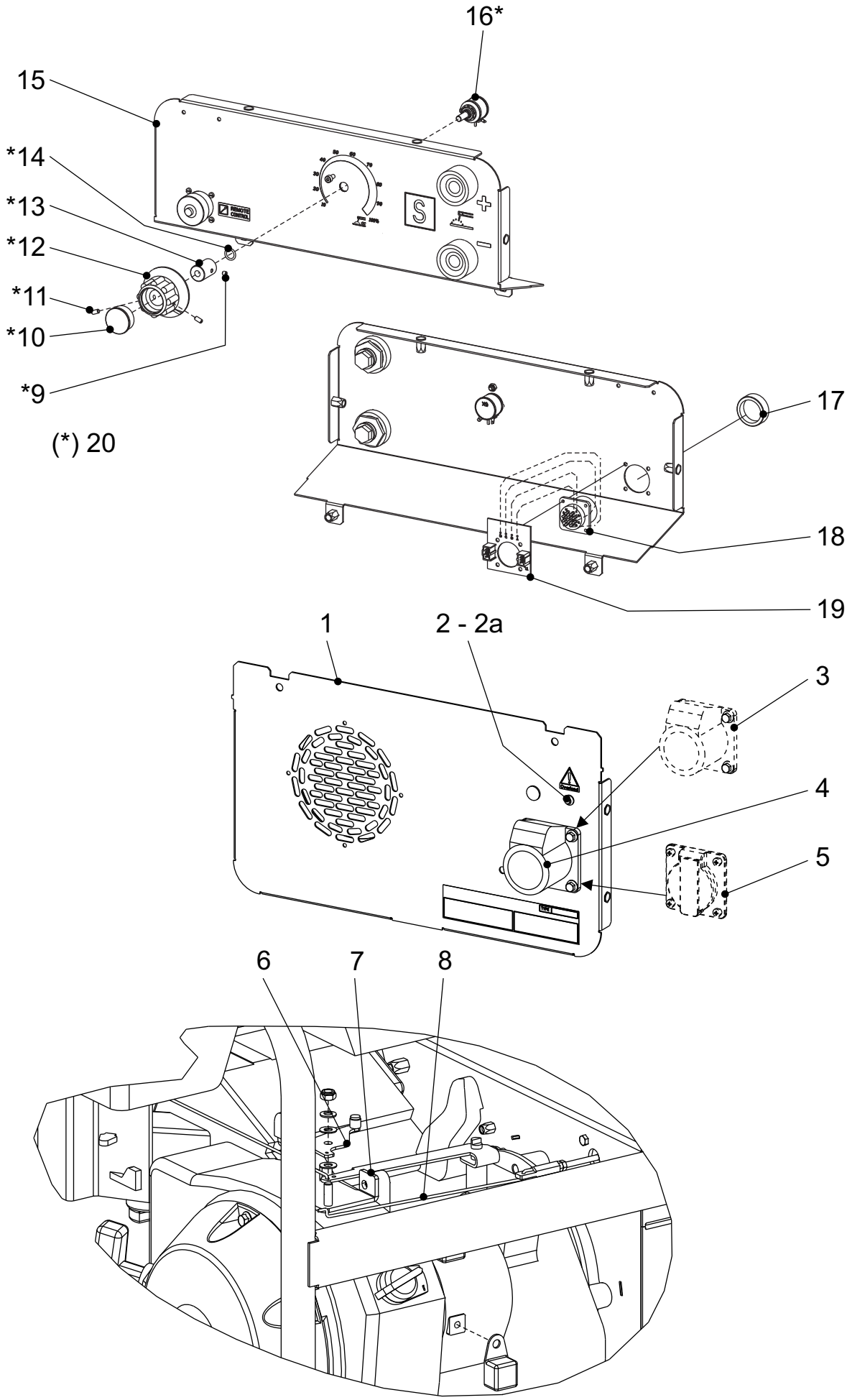
ABBREVIATIONS AND SYMBOLS:

(EV) When ordering, specify the engine type and the auxiliary voltage
(ER) Engine with recoil starter only
(ES) Engine with electric starter only
(VE) E.A.S version only.
(QM) When ordering, specify the length in meters
(VS) Special version only
(SR) By request only


1
2
7
6
5
4
3
9
15
14
13
8
12
11
10
16
17
18
21
(qm)
19A
19B
19C
20
22
23
24
25
26

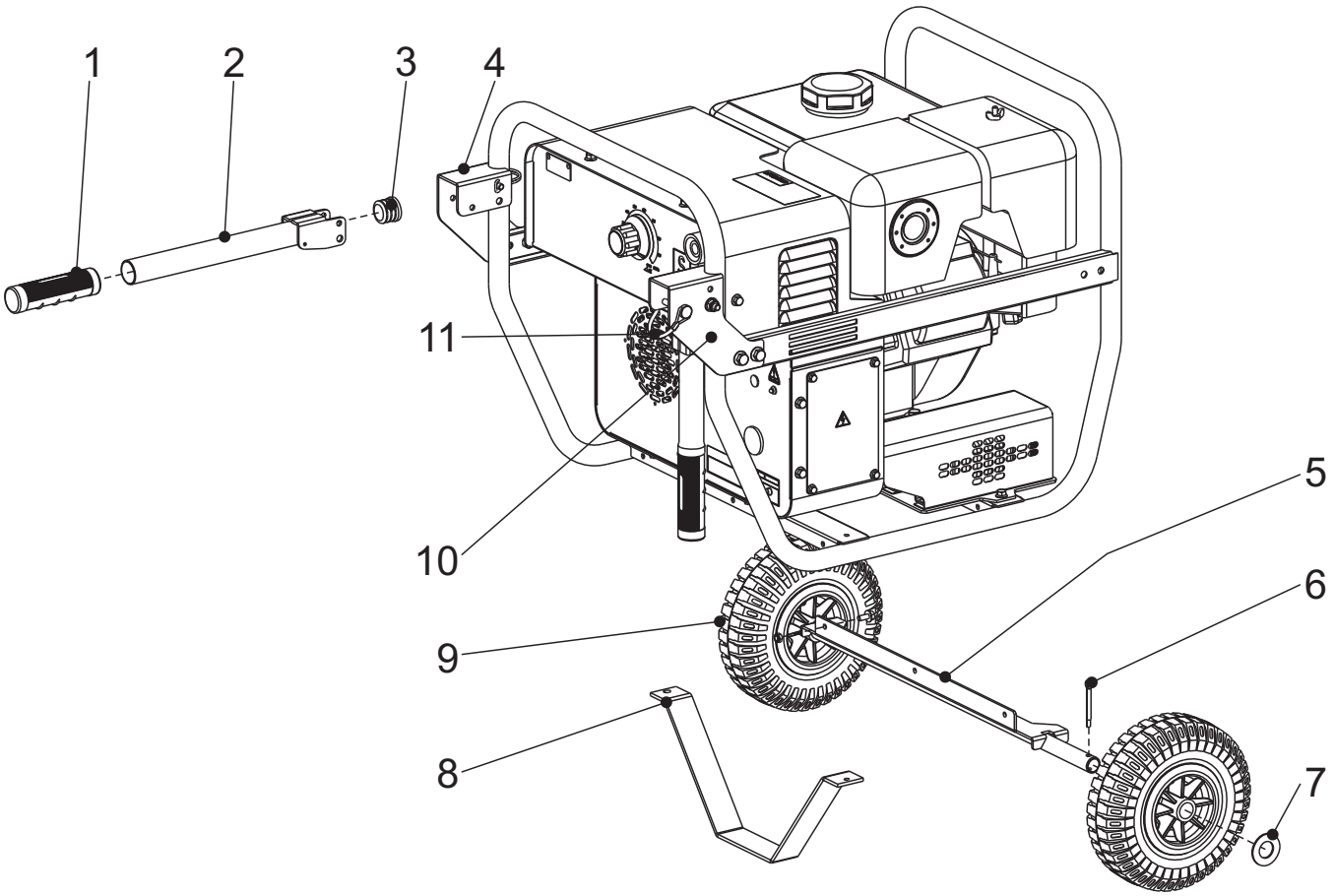
Pos.	Rev.	Cod.	Descr.	Note
1		M222503045	FLANGIA SUPPORTO ALTERNATORE	
2		M306412200	MOTORE HONDA GX270	
3		M222503061	DISTANZIALE	
4		M222418263	PIASTRINA	
5		M222503025	STATORE AVVOLTO 230 VAC	
6		M222503047	ASSIEME MOZZO/ ROTORE	
7		M222406020	VENTOLA	
8		M222402244	MORSETTO PER FUNE	
9		M222508169	SCATOLA COMPLETA	
10		M222507169	FRONTALE PORTA SCHEDA SALDATURA	
11		M222509800	SCHEDA UNITA' CONTROLLO SALD.	
12		M256011035	ANTIVIBRANTE	
13		M222505400	PONTE CHOPPER	
14		M208029104	DISTANZIALE ISOLANTE	
15		M222409050	ELETTROMAGNETE ECONOMIZZATORE	
16		M372955107	SENSORE DI HALL 300A	
17		M222509757	STAFFA SUPERIORE FISSAGGIO INVERTER	
18		M222509756	STAFFA SUPPORTO INVERTER	
19a		M222509755	INVERTER 230VAC DC/AC 2KVA 50Hz	
19b		M222519755	INVERTER 110VAC DC/AC 2KVA 50Hz	
19c		M222539755	INVERTER 110VAC DC/AC 1.8KVA 60Hz	
20		M1270080	PROFILATO GOMMA	
21		M306418310	GUARNIZIONE (L=MT.1)	
22		M222504126	LAMIERA PROTEZIONE REATTORE	
23		M222501050	BARELLA	
24		M222504100	REATTORE DI LIVELLO	
25		M222501372	PIASTRA SUPPORTO REATTORE	
26		M256011035	ANTIVIBRANTE	

Pos.	Rev.	Cod.	Descr.	Note
1		M222503045	ALTERNATOR SUPPORT FLANGE	
2		M306412200	HONDA ENGINE GX270	
3		M222503061	SPACER	
4		M222418263	SMALL PLATE	
5		M222503025	STATOR	
6		M222503047	HUB/SHAFT ASSY	
7		M222406020	FAN	
8		M222402244	TERMINAL	
9		M222508169	COMPLETE BOX	
10		M222507169	WELDING PCB PANEL	
11		M222509800	WELDING CONTROL PCB	
12		M256011035	VIBRATION DAMPER	
13		M222505400	CHOPPER BRIDGE	
14		M208029104	SPACER	
15		M222409050	ECONOMIZER SOLENOID	
16		M372955107	HALL SENSOR	
17		M222509757	UPPER BRACKET FOR INVERTER	
18		M222509756	INVERTER SUPPORT BRACKET	
19a		M222509755	INVERTER 230VAC DC/AC 2KVA 50Hz	
19b		M222519755	INVERTER 110VAC DC/AC 2KVA 50Hz	
19c		M222539755	INVERTER 110VAC DC/AC 1.8KVA 60Hz	
20		M1270080	RUBBER PROTECTION	
21		M306418310	PROTECTION GASKET (L=MT.1)	
22		M222504126	REACTOR PROTECTION	
23		M222501050	FRAME	
24		M222504100	CAPACITOR BOX	
25		M222501372	REACTOR SUPPORT PLATE	
26		M256011035	VIBRATION DAMPER	


16*
15
*14
*13
*12
*11
*10
*9
(*) 20
17
18
19
1
2 - 2a
3
4
5
6
7
8

Pos.	Rev.	Cod.	Descr.	Note
1		M222507205	PANNELLO FRONTALE	
2		M22250c001	SPIA COMPLETA DI CAVI	230V
2a		M22251c001	SPIA COMPLETA DI CAVI	110V
3		M307047250	PRESA CEE 110V 16A 2 P+T	
4		M307017240	PRESA 220V 16A	
5		M259107241	PRESA SCHUKO 16A 230V - 2P+T	
6		M222502230	ASSIEME LEVA COMANDO GAS MOTORE	
7		M222502199	SQUADRETTA SUPP. LEVA COMANDO GAS MOTORE	
8		M222508460	FILO RIGIDO COMANDO ACCELERATORE	
9		M6060050	GRANO M 4X4 UNI 5923 R45H	*
10		M107011870	TAPPO	*
11		M6060070	GRANO FILETTATO E.I.M4X8	*
12		M207409751	MANOPOLA REGOLAZ. CORR. SALDAT.	*
13		M107799349	BUSSOLA	*
14		M1018090	ANELLO OR 2037	*
15		M222507020	PANNELLO FRONTALE (superiore)	
16		M270009701	POTENZIOMETRO	*
17		M765009911	CAPPUCCIO X CONNETTORE	
18		M765009910	CONNETTORE	
19		M222509632	SCHEDA REMOTE CONTROL	
20		M222440543	KIT POTENZIOMETRO + MANOPOLA	(*)

Pos.	Rev.	Cod.	Descr.	Note
1		M222507205	FRONT PANEL	
2		M22250c001	WARNING LIGHT (CABLES INCLUDED)	230V
2a		M22251c001	WARNING LIGHT (CABLES INCLUDED)	110V
3		M307047250	EEC SOCKET 16A,110V 2P+T	
4		M307017240	EEC SOCKET 16A, 220V 2P+T	
5		M259107241	SOCKET SCHUKO 16A, 230V 2P+T	
6		M222502230	ENGINE GAS LEVER	
7		M222502199	ENGINE GAS LEVER BRACKET	
8		M222508460	ACCELERATOR WIRE	
9		M6060050	DOWEL	*
10		M107011870	CAP	*
11		M6060070	DOWEL	*
12		M207409751	KNOB WELDING CURRENT REGULAT.	*
13		M107799349	SLEEVE	*
14		M1018090	O RING	*
15		M222507020	FRONT PANEL	
16		M270009701	POTENTIOMETER	*
17		M765009911	CONNECTOR CAP	
18		M765009910	CONNECTOR	
19		M222509632	REMOTE CONTROL PCB	
20		M222440543	POTENTIOM. KIT + KNOB	(*)



Pos.	Rev.	Cod.	Descr.	Descr.
1		219861159	MANOPOLA	*KNOB*
2		222421226	MANIGLIA DI SOLLEVAMENTO	*LIFTING HANDLE*
3		102011270	TAPPO PER MANIGLIA	*CAP FOR HANDLE*
4		222500183	PIASTR.(SX) FISS.MANIGLIA	*LEFT FIXING PLATE*
5		222421160	ASSALE	*AXLE*
6		6075020	COPIGLIA	*PIN, SPLIT*
7		222422038	RONDELLA	*WASHER*
8		222421051	PIEDE DI STAZIONAMENTO	*PARKING STAND*
9		222421170	RUOTA	*WHEEL*
10		222500184	PIASTR.(DX) FISS.MANIGLIA	*RIGHT FIXING PLATE*
11		222429359	SPINA DI SICUREZZA	*SAFETY PLUG*